Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

UNITED STATES DEPARTMENT OF AGRICULTURE

BULLETIN No. 608

Contribution from the Bureau of Animal Industry
A. D. MELVIN, Chief

Washington, D. C. March 6, 1918

VARIETIES OF CHEESE: DESCRIPTIONS AND ANALYSES

By

C. F. DOANE, Dairy Manufacturing Specialist, Dairy Division,
and H. W. LAWSON, Formerly of the Office
of Experiment Stations

CONTENTS

	Page		Page
Introduction	1	Sources of Analytical Data	71
Description of Varieties of Cheese	3	Index to Descriptions and Analyses of Cheese	77
Analyses of Cheese	62		

Rev.ed.
follows

WASHINGTON
GOVERNMENT PRINTING OFFICE
1918

UNITED STATES DEPARTMENT OF AGRICULTURE

BULLETIN No. 608

Contribution from the Bureau of Animal Industry
A. D. MELVIN, Chief

Washington, D. C. ▼ March 6, 1918

VARIETIES OF CHEESE: DESCRIPTIONS AND ANALYSES.[1]

By C. F. DOANE, *Dairy Manufacturing Specialist, Dairy Division,* and H. W. LAWSON, *formerly of the Office of Experiment Stations.*

CONTENTS.

	Page.		Page.
Introduction	1	Sources of analytical data	71
Description of varieties of cheese	3	Index to descriptions and analysis of cheese	77
Analyses of cheese	62		

INTRODUCTION.

In the fiscal year 1901 the importations of cheese into the United States were valued at $1,946,033, and since then have increased very greatly, as shown in the table below:

TABLE I.—*Importations of cheese into the United States.*

1901	$1,946,033
1905	3,875,161
1910	7,053,570
1911	7,920,244
1912	8,807,249
1913	9,185,184
1914	11,010,693

A number of varieties are included in these importations, and nearly all are among the highest priced cheeses made, such as Emmental from Switzerland, Parmesan and Gorgonzola from Italy, Roquefort, Camembert, and Brie from France, and Edam from Holland.

[1] This bulletin is a revision of Bureau of Animal Industry Bulletin 146, which was issued in 1911, and which in turn was a revision of Bureau of Animal Industry Bulletin 105, issued in 1908. Dr. Lawson was a joint author of the original work, but is not responsible for the changes embodied in the present edition. Acknowledgment is made of suggestions and information received from the Bureau of Chemistry.

13113°—18—Bull. 608——1

The attempt to make Emmental and Limburg cheese in this country has been very successful, as is proved by the statement that in Wisconsin alone 500 factories are making these varieties; also, some factories in Ohio, New York, and northern Illinois are making them. Investigation by this department in cooperation with the experiment station at Storrs, Conn., has demonstrated that Camembert, and also a cheese of the same general nature as Roquefort or Stilton, can be made successfully in this country. There is no reason to believe that any variety of cheese imported can not be made here, although with present knowledge it would not be advisable to try to make many kinds. Probably scientific investigation would show how to improve on the average quality of the cheese made in the old countries, for it must be remembered that only the very best is shipped by the European makers, the rest, or poorer grades, being consumed at home. Unfortunately, a feeling is prevalent in the United States that cheese equal to the best of the European product can not be produced here. This feeling is based upon a lack of knowledge of actual conditions in Europe and of the conditions affecting the qualities of cheese. Certain parts of Europe probably are better favored by desirable climatic conditions and by more general dissemination of the bacteria or molds necessary to the characteristic ripening of different varieties, but even the best average natural conditions can be improved on by artificial means, since necessary molds or bacteria can be grown in pure cultures and utilized anywhere. However, the cost may render it impracticable.

It is an unfortunate fact that the sale of homemade varieties of European cheese is seriously handicapped by the partiality of consumers for foreign labels. The prejudice against American-made cheese has been intensified to a great degree by the practice of dealers who sell the better grades of homemade cheese as imported, and the poorer grades as domestic. It is probable that this practice continues in the sale of domestic Swiss or Emmental, as there is at present no means of detecting fraud in the sale of that type of cheese.

The demand for information concerning the different varieties of cheese has become general, and the information is not very accessible to those unable to read other languages than English. The apparent need of some work of reference in connection with both the importation and the home production of cheese has therefore led to the prepartion of the descriptive notes and the compilation of the analytical data in this bulletin.

The descriptions are for the most part based upon data found in treatises on dairying and in articles in foreign periodicals. While in many instances they are very incomplete and possibly in some cases inaccurate, they nevertheless contain in condensed form practically all the important information that it has been possible to obtain

in an extended search through the literature relating in any way to the subject. Owing to the large number of publications consulted, it has seemed impracticable to give references to the descriptive matter.

As will be noted, names and descriptions have been arranged alphabetically, and no attempt has been made to classify the varieties. All such attempts made by others have been unsatisfactory and are open to serious criticism. There are probably about 18 distinct varieties of cheese. All the rest, consisting of more than 400 names given, are of local origin, usually named after towns or communities. A list of the best known names applied to each of these distinct varieties or groups is given: Brick, Caciocavallo, Camembert, Cheddar, Cottage, Dry, Edam, Emmental, Gouda, Hand, Holstein, Limburg, Neufchâtel, Parmesan, Roquefort, Sapsago, Scanno, and Trappist.

As stated, many of the names in the body of the bulletin are duplicates. It is the practice in most European countries to give local names to cheese; it is said that in France more than 250 names are applied to cheese, while in fact probably not more than a dozen distinct kinds of cheese are made there. This naturally leads to much confusion, and especially is it true, as often happens, when a local name is given to more than one variety. It would certainly appear to be more rational to retain or employ variety names and give the names of the localities where manufactured. It is possible for a local name to mean much, but when it is used alone to apply to a number of varieties of the same product it means nothing.

In most instances in this bulletin the analyses have been compiled from the original publications. In all cases, however, the sources of the data have been given in the list of references which follows the table of analyses. No effort has been made to collect the numerous analyses of filled cheese, and in the case of American Cheddar cheese only a part of the available data has been included in the compilation.

DESCRIPTION OF VARIETIES OF CHEESE.

ABERTAM.

This is a hard, rennet cheese made from sheep's milk in the region of Carlsbad, Bohemia.

ALEMTEJO.

This name is applied to rather soft cheeses made in the Province of Alemtejo, Portugal. They are cylindrical in shape and are made in three sizes, averaging about 2 ounces, 1 pound, and 4 pounds, respectively. They are made for the most part from the milk of sheep, though goats' milk is often added, especially for the smaller sizes. The milk is warmed and curdled usually with an extract prepared from the flowers of a kind of thistle. The cheeses are ripened for several weeks.

ALPIN.

This is a kind of Mont d'Or cheese made in the Alpine regions of France. It is also known as Clérimbert. The milk is coagulated with rennet at 80° F. in two hours. The curd is dipped into molds 3 or 4 inches in diameter and 2½ inches in height. The cheese is allowed to drain and is turned several times during one day, after which it is salted and ripened for from 8 to 15 days.

ALTENBURG.

This is a goats'-milk cheese made in Germany, where it is known as Altenburger Ziegenkäse. A cheese is 8 inches in diameter, 1 or 2 inches in thickness, and weighs about 2 pounds.

AMBERT.

This cheese, known as Fourme d'Ambert, is a cylinder-shaped imitation Roquefort cheese made from cows' milk. It is said to differ from other forms of blue or imitation Roquefort cheese made in the southeastern part of France in that the salt is mixed with the curd rather than rubbed on the surface of the cheese.

ANCIEN IMPÉRIAL.

In this cheese the curd is prepared in the same manner as for Neufchâtel. It is also known as Petit Carré and, when ripened, as Carré Affiné. The cheese is about 2 inches square and one-half inch thick, and is sold and consumed both while fresh and after ripening. The ripening process is not essentially different from that of Neufchâtel.

APPENZELL.

This cheese, which is very similar to Emmental, is made of cows' milk in the Canton of Appenzell, Switzerland, and also in Bavaria and Baden. It is usually made of skim milk, but sometimes of whole milk.

ARMAVIR.

Armavir cheese is made in the western Caucasus from the whole milk of sheep. It is made of sour milk, resembles hand cheese, and is produced by pouring sour buttermilk or whey into the heated milk. The cheese is pressed into forms and allowed to ripen in a warm place.

BACKSTEIN.

Backstein, meaning brick, is so called from its shape, but it is not identical with the Brick cheese made in the United States. The process of manufacture is similar to that of Limburg.

BANBURY.

This was a soft, rich cheese, very popular in England in the early part of the nineteenth century. It was a cylindrical cheese about 1 inch thick.

BARBEREY.

This is a soft, rennet cheese resembling Camembert and deriving its name from the village of Barberey, near Troyes, France. It is also commonly known as Fromage de Troyes. The milk while still fresh and warm is coagulated with rennet, the time allowed being usually about four hours. The uncut curd is put into a wooden mold having a perforated bottom. After draining

for three hours the cheese is turned into an earthenware mold, the wooden one being removed after 24 hours. The cheeses are salted, dried in a well-ventilated room, and ripened for about three weeks, usually in a subterranean curing room. In summer the cheese is often sold without ripening. A cheese is 5 or 6 inches in diameter and 1¼ inches in thickness.

BATTLEMAT.

This is an Emmental cheese made in the Canton of Tessin, Switzerland, in the western part of Austria, and in the northern part of Italy. It is recommended for localities where a great quantity of milk can not be obtained. The cheese is circular in form, about 16 inches in diameter and 4 inches high, and weighs from 40 to 80 pounds. It is cooked at a slightly lower temperature than the Emmental and is a little softer when ripened. It ripens more rapidly than the Emmental, being ready for market in about four months.

BAUDEN.

Baudenkäse is a sour-milk cheese made in the herders' huts in the mountains between Bohemia and Silesia in essentially the same manner as Harzkäse. It is made up in two forms, one conical with a diameter and a height of 3½ inches, and the other cylindrical, with a diameter of 5 inches and a height of 2½ inches. It is also known locally as Koppenkäse.

BELGIAN COOKED.

The milk, which has been allowed to curdle spontaneously, is skimmed and the curd heated to 135° or 140° F. and then placed in a cloth and allowed to drain. When dry it is thoroughly kneaded by hand and is allowed to undergo fermentation, which takes ordinarily from 10 to 14 days in winter and six to eight days in summer. When the fermentation is complete, cream and salt are added and the mixture is heated gently and stirred until homogeneous, when it is put into molds and allowed to ripen for eight days longer. A cheese ordinarily weighs about 3½ pounds. It is not essentially different from other forms of cooked cheese.

BELLELAY.

This is a soft, rennet cheese made from whole milk and sometimes called Tête de Moine, or Monk's Head. This cheese originated with the monks of the Canton of Bern, Switzerland, in the fifteenth century, and at the present time is made exclusively in that locality.

The sweet milk is set at about 90° F. with sufficient rennet to coagulate it in 20 or 30 minutes. The curd is cut comparatively fine and is stirred while being heated slowly to a temperature of 110° F. It is cooked much firmer than Limburg and not so firm as Emmental.

When cooked the curd is dipped into wooden hoops lined with cloth. The cheeses are pressed in rotation for a few minutes at a time, one press being used for a number of cheeses. After pressing, the cheeses are wrapped in bark for two weeks, or until they are firm enough to require no support. They are cured in a moist cellar at a comparatively low temperature, as it is not desired to have eyes develop. The cheese when ready for market has a diameter of 7 inches and weighs from 9 to 15 pounds. It ripens in about 12 months and will keep for three or four years. It has a soft, buttery consistency and can be spread on bread for eating.

BERGQUARA.

This is a Swedish cheese resembling Gouda. It was known in Sweden in the eighteenth century.

BGUG-PANIR.

This cheese, sometimes called Daralag, is made in Armenia from sheep's milk, partially or entirely skimmed. Rennet is used for coagulation and the curd is put into a rack for draining, after which it is broken up and salt and herbs added. After pressing again, the cheese is put into a salt bath, usually for two days, but sometimes for two months.

BITTO.

This is a cheese of the Emmental group, made in northern Italy. It is sometimes eaten fresh and sometimes ripened for two years, when it is very hard and has small eyes.

BLEU.

The names Pâté Bleu and Fromage Bleu are applied to several kinds of hard, rennet cheese made from cows' milk in imitation of Roquefort cheese in the southeastern part of France. Owing to the mottled, marbled, or veined appearance they are also designated Fromage Persillé. Among these are Gex, Sassenage, and Septmoncel. This name is also applied locally to several more or less distinct kinds made in the regions of the Auvergne and Aubrac Mountains and designated Bleu d'Auvergne, Cantal, Guiole or Laguiole, and St. Flour. Other cheeses of this order mentioned as made in France are Queyras, Champoléon, Sarraz, and Journiac.

BOUDANNE.

This is a French cheese made from cows' milk. The milk, either whole or skimmed, is heated to about 85° F., sufficient rennet is added to coagulate it in one hour, and the curd is cut to the size of peas, stirred, and heated to 100° F. or above. After standing for 10 or 15 minutes the curd is pressed by hand and put into molds 8 inches in diameter and 3 inches in height. The cheeses are drained, turned frequently, salted, and ripened for two or three months.

BOX (FIRM).

This cheese, known in different localities where made as Hohenburg, Mondsee, and Weihenstephan, is made from cows' milk, whole, and is a rather firm rennet cheese. The flavor is said to be mild but piquant. The milk is heated to 90° or 93° F. in a kettle, colored with saffron, and set with sufficient rennet to curdle it in 20 or 25 minutes. The curd is cut up as fine as peas, and the contents of the kettle are heated very slowly to a temperature of 105° F., being stirred meanwhile. The fire is then removed and the curd allowed to settle for five minutes, when the whey is dipped off. The curd is then dipped into a cloth, whence it is scooped into hoops. Light pressure is applied, in 15 minutes the cheese is turned, and the turning is repeated frequently for several hours. The cheese is kept in a well-ventilated room at 60° F. for from three to five days, after which it is taken to the cellar. It is salted by rubbing or sprinkling salt on the surface. Ripening requires from two to three months. The cheese weighs from 1 to 4 pounds, and is undoubtedly similar to the Brick cheese of the United States.

BOX (SOFT).

This is a rennet cheese made from cows' milk, partially skimmed, and known locally as Schachtelkäse. It is a rather unimportant variety produced in Württemberg in a small locality called Hohenheim, a name which the cheese often takes.

In making this cheese the evening's milk, skimmed, is mixed with the whole milk drawn that morning, or a part of the milk is skimmed with a centrifuge and is mixed with an equal volume of whole milk. The cheese is made in a copper kettle. The milk is warmed to 110° F., colored with saffron, and rennet added. It is allowed to stand for one or one and one-half hours before cutting. The curd is cut into rather coarse particles, after which it is allowed to stand for a few minutes, when the whey is dipped off, and for every 200 pounds of milk used a small handful of caraway seed is added. The curd is then dipped into hoops 6½ inches in height and the same in diameter. It remains in these hoops for 10 hours and is frequently turned, after which it is transferred to a wooden hoop only one-half as high, where it remains for 12 hours. The cheese is then sprinkled with salt and put into the ripening cellar, where it remains about three months.

A soft, rennet cheese known as Fromage de Boîte is made in the fall in the mountains of Doubs, France, and resembles Pont l'Evêque.

BRA.

This cheese is made by nomads in the region of Bra in Piedmont, Italy. It is a hard, rennet cheese weighing about 12 pounds. The milk, which is partly skimmed, is heated to about 90° F., and sufficient rennet is added to coagulate it in 30 or 40 minutes. The curd is cut to the size of rice grains and the whey removed after about half an hour. It is then put into a form about 12 inches in diameter and 3 inches in height and subjected to pressure for from 12 to 24 hours. The cheese is salted by immersion in brine and also by sprinkling salt on the surface, after which it is ripened.

BRAND.

This is a German hand cheese weighing about one-third of a pound, made from sour-milk curd cooked at a little higher temperature than ordinarily practiced. The curd is salted and allowed to ferment one day. It is then mixed with butter, pressed into shape and dried, and finally placed in kegs to ripen, during which process it is moistened occasionally with beer.

BRICK.

The exact derivation of this name is not known. It may have been adopted because of the shape, or because of the fact that bricks are used almost exclusively for weighting down the press. Brick cheese is a rennet cheese made from cows' milk, unskimmed, and is purely an American product. In characteristics it is about halfway between Limburg and Emmental. It has a strong, sweetish taste, a sort of elastic texture, and many small, round eyes or holes. It is made about 10 by 6 by 3 inches in size. Many factories, especially in southern Wisconsin, make this product.

Perfectly sweet milk is set in a vat at 86° F. with sufficient rennet to coagulate it in 20 or 30 minutes. The curd is cut with Cheddar curd knives, is then heated to 110° or 120° F., and is stirred constantly. The cooking is continued until the curd has become so firm that a handful squeezed together will

fall apart when released. The curd is then dipped into the mold, which is a heavy rectangular box without a bottom and with slits sawed in the sides to allow drainage. The mold is set on the draining table, a follower is put on the curd, and one or two bricks are used on each cheese for pressure. The cheeses are allowed to remain in the molds for 24 hours, when they are removed, rubbed all over with salt, and piled three deep. The salting is done each day for three days, after which the cheese is taken to the ripening cellar, which should be comparatively moist and have a temperature of from 60° to 65° F. Ripening requires two months.

BRICKBAT.

This is a rennet cheese made as early as the eighteenth century in Wiltshire, England. It is made from fresh milk to which a small portion of cream has been added. The milk is set at about 90° F. and allowed to stand two hours before the curd is disturbed. The curd is cut coarse, dipped into wooden forms, and light pressure applied. The cheese is said to be fit for consumption for one year after being made.

BRIE.

This is a soft, rennet cheese made from cows' milk, varying in size and also in quality, depending on whether whole or partly skimmed milk is used. The method of manufacture resembles closely that of Camembert.

This cheese has been made in France for several centuries, having been mentioned as long ago as 1407. It is made throughout France, but more extensively in the Department of Séine et Marne, in which it doubtless originated. This department contains Meaux, Coulommiers, and Melun, places noted for their manufacture of Brie cheese, though often under local names. More or less successful imitations of this cheese are made in other countries. It was estimated that 7,000,000 pounds of Brie cheese was sold in Paris during 1900. The export trade is also very important.

The milk used is usually perfectly fresh. It is not uncommon, however, to mix the evening's milk, when kept cool overnight, with the morning's milk. Some artificial coloring matter is added to the milk, which is then set with rennet at a temperature of 80° or 85° F. After standing undisturbed for about two hours, the curd is dipped into forms or hoops, of which there are three sizes in common use. The largest size is about 15 inches in diameter, the medium size about 12 inches in diameter, and the smallest size about 6 inches in diameter, all varying in height from 2 to 3 inches. After drainage for 24 hours without pressure being applied, the hoops are removed, and the surface of the cheese is sprinkled with salt. Charcoal is sometimes mixed with the salt used. The cheese is then transferred to the first curing room, which is kept dry and well ventilated. After remaining in this room for about eight days the cheese becomes covered with mold. It is then transferred to the second curing room or cellar, which is usually very dark, imperfectly ventilated, and has a temperature of about 60° F. The cheese remains there for from two to four weeks, or until the consistency and odor indicate that it is sufficiently ripened. The red coloration which the surface of the cheese finally acquires has been attributed to an organism designated *Bacillus firmaticus*. The ripening is due to one or more species of molds which occur on the surface and produce enzyms, which in turn cause a gradual and progressive breaking down of the casein from the exterior toward the center. The interior of a ripened cheese varies in consistency from waxy to semiliquid and has a very pronounced odor and a sharp, characteristic taste.

BRINSEN OR BRINZA.

This cheese, known locally as Landoch, Zips, Liptau, Siebenbürgen, Neusohl, Altsohl, and Klencz, is made in the Carpathian Mountains of Hungary from sheep's milk, or a mixture of sheep's and goats' milk.

The cheese is made in small lots, from 2 to 4 gallons of milk being used at one time. This is put into a kettle when fresh, and sufficient rennet is added with the milk at a temperature of from 75° to 85° F. to secure coagulation in 15 minutes. The curd is broken up and the whey dipped, and the curd is placed in a linen sack and allowed to drain for 24 hours. It is then cut into pieces and placed on a board, where with frequent turnings it is allowed to remain until it commences to get smeary, which requires about eight days. The pieces are then laid one on top of another in a vessel holding from 40 to 60 pounds, where they remain for 24 hours, after which they are removed, the rind cut away, and the curd or partially cured cheese broken up in another vessel. After 10 hours salt is stirred in and the curd run through a mill, which cuts it very fine, when it is packed in a tub with beech shavings.

BROCCIO.

This is a sour-milk cheese made from sheep's milk in Corsica. It is sometimes mixed with sugar and rum and made into small cakes. It is similar to Ziger.

BURGUNDY.

This cheese, known in France as Fromage de Bourgogne, is described as a soft, white, loaf-shaped cheese weighing about 4 pounds.

BUTTERMILK.

This cheese, made from the curd of buttermilk, is of somewhat finer grain than skimmed-milk cottage cheese, which it closely resembles. Buttermilk of 0.5 or 0.6 per cent acidity is run into a steam-heated vat or starter can, or placed in a pail which can be heated in a tub of hot water. The buttermilk is stirred and heated to 75° or 78° F., then covered and left for one and one-half or two hours. The temperature is then raised to 140° F., and in about one hour the curd settles to the bottom. The whey is removed and the curd transferred to a draining cloth or bag for about 10 hours. It should be stirred occasionally while draining. When dry the curd is salted, put up in small packages, and wrapped in parchment paper.

CACIOCAVALLO.

This is a somewhat peculiar kind of cheese made from either whole or partly skimmed milk of cows. Various explanations have been made as to the origin of the name, which means literally horse cheese. One explanation offered is that the cheese was originally made in the region of Monte Cavallo, and another is that the imprint of a horse's head was made in each cheese as the trade-mark of the original manufacturer. The original home of this cheese was southern Italy, but it is now made extensively in northern Italy as well. The history of the cheese dates back several centuries.

The temperature of the coagulation of the milk with rennet varies greatly but is usually from 90° to 95° F. The time allowed for coagulation is also variable, being usually about one-half hour. The curd is cut very fine and sometimes allowed to ferment for 24 hours, when it is heated by means of very hot water, or more commonly hot whey, and subsequently worked by hand until all the whey is expressed and the curd becomes homogeneous and capable

of being drawn out into long threads. It is then molded into any desired shape and salted by immersion in brine for about two days. The cheeses are suspended in pairs from the ceiling and lightly smoked. The surface may be rubbed with olive oil or butter. They are kept in a cool, dry room until sold. As seen on the market they vary much in size and shape, and weigh about 3 pounds. The most common shape is that resembling a beet, a constriction near the top being due to the string which is tied around the cheese for the purpose of hanging it up. This cheese is sometimes eaten while comparatively fresh, but is more frequently kept for months, then grated and used for flavoring soups and as an addition to macaroni and similar foods. A small quantity is imported into the United States.

CACIO FIORE.

This is a soft, rennet cheese made in Italy from sheep's milk. Throughout the process comparatively low temperatures are maintained. The soft curd is put into square forms capable of holding about 4 pounds of cheese. The cheese has a consistency like butter, has a sweetish taste, and is eaten fresh.

CAERPHILLY.

This is a hard, rennet cheese made in Wales from cows' milk, unskimmed. The milk is set very sweet at a temperature of 85° F. with rennet enough to coagulate it in one hour. The curd is cut in $\frac{1}{3}$-inch cubes and stirred for one hour without further heating. It is then put into cloths and subjected to light pressure for an hour and is again broken up fine and put to press, where it remains, with daily changing, for three days. During this time one-half ounce salt to each pound of curd is rubbed on the surface. Each cheese weighs about 8 pounds and requires about three weeks for ripening, at a temperature of 65° or 70° F.

CAMBRIDGE.

This is a soft, rennet English cheese made from cows' milk set at 90° F. and rennet added. At the end of one hour the curd is dipped into molds without cutting and allowed to stand for 30 hours, when it is ready for eating.

CAMEMBERT.

This is a soft, rennet cheese made from cows' milk. A typical cheese is about $4\frac{1}{4}$ inches in diameter, three-quarters of an inch or 1 inch thick, and in the market in this country is usually found wrapped in paper and inclosed in a wooden box of the same shape. The cheese usually has a rind about one-eighth of an inch in thickness, which is composed of molds and dried cheese. The interior is yellowish in color and waxy, creamy, or almost fluid in consistency, depending largely upon the degree of ripeness.

Camembert cheese is said to have originated in 1791 in the locality from which it derives its name in the Department of Orne, in the northwestern part of France. The industry extended soon into Calvados, and these two departments are still the principal seat of the industry. Cheese of the same type, however, is made in other parts of France and also in other countries; among them are Compiègne, Contentin, Pavillon, Soumaintrain, and Thury-en-Valois. Very successful results have been obtained at the Storrs Agricultural Experiment Station in Connecticut.

Camembert cheese is made from whole milk or from milk slightly skimmed. It is not advisable to skim the milk unless it tests more than 3.5 per cent fat. The temperature of setting is from 78° to 87° F., and the quantity of rennet added

for this purpose is sufficient to get the desired degree of firmness in from two to five hours. The curd is then transferred, usually with as little breaking up as possible, to perforated tin forms or hoops about 4¼ inches in diameter and the same in height. These rest upon rush mats, which permit free drainage. The filling of the forms may be done at two or three times, separated by short intervals allowed for the curd to settle. Each form holds the equivalent in curd of about 2 quarts of milk. After draining for about 18 hours, preferably in a room having a uniform temperature of 65° or 70° F., the cheese is turned. This is repeated frequently for about two days, when it is removed from the forms and salted on the outside. After 24 hours the cheese is carried to the curing rooms, which are maintained at temperatures of from 53° to 59° F. and with a high relative humidity. Curing the cheese is the most difficult part of the manufacturing process, for not only must there be a uniform and progressive development of the ripening agents, but the curd must be gradually desiccated at the same time. Proper conditions of humidity and temperature must be maintained and subject to regulation in order to favor the development of the needful mold, *Penicillium camemberti*, the bacteria, and yeasts. While the growth of the mold is necessary in order to bring about a gradual breaking down of the casein, this growth should not be too vigorous and luxuriant; otherwise the product will be rendered unfit for commercial purposes. Following the growth of the mold, other organisms develop, giving the resultant cheese a reddish appearance instead of a white and blue, as is the case in the initial mold fermentation. From 15 to 20 days are required to bring about the proper balance between the various forms of life. At the end of that time the cheese is allowed to complete its ripening at the lower limits of the indicated temperatures and with a minimum of ventilation. From four to six weeks are normally required before this variety of cheese is in fit condition for the market.

CANQUILLOTE.

This is a skim-milk cheese made in the eastern part of France. It is also known locally as Fromagère and Tempête. The milk is allowed to coagulate spontaneously, after which it is heated gently and the whey drawn off. The curd is pressed in order to remove as much of the whey as possible, crumbled fine, and fermented at a temperature of about 70° F. for two or three days, during which time it is stirred frequently. When the cheese has acquired its characteristic taste it is melted with the addition of water, salt, eggs, and butter and put into molds of various kinds.

CANTAL.

This is a hard, rennet cheese made from cows' milk more or less skimmed. Its manufacture is extensive in the Department of Cantal, France. It is also known as Auvergne or Auvergne Bleu on account of its being manufactured in the region of the Auvergne Mountains. Locally the cheese is commonly known as Fourme. The cheese is doubtless a very old variety, and the method of manufacture has remained quite primitive. The milk, usually fresh but sometimes several hours old, is set with rennet at a temperature of about 85° F., the time allowed for coagulation being about 30 minutes. The curd is then cut very fine and the whey dipped off. The curd is subjected to pressure in order to remove as much of the whey as possible, and is allowed to ferment for 24 hours, which process is considered very important. The curd is then broken up by hand or by machinery and salted at the rate of 2.5 or 3 per cent. When thoroughly kneaded it is put into hoops about 14 inches in diameter. Pressure

is applied for about two days, during which time it is turned very frequently. The cheese is next transferred to the curing cellar, where it remains for from six weeks to six months. The yield of cheese is usually 10 or 11 per cent of the weight of the milk. A ripened cheese weighs from 40 to 120 pounds.

CHAMPOLÉON.

Champoléon, or Queyras, is a hard, rennet cheese made from skim milk in the Department of Hautes-Alpes, France.

CHAOURCE.

This is a soft, whole-milk rennet cheese resembling Camembert and deriving its name from the village of Chaource, in the Department of Aube, France. It is about 4 inches in diameter and 3 inches thick.

CHASCHÔL DE CHASCHOSIS.

This cheese is made in the Canton of Grisons, Switzerland. It is a hard rennet cheese made from cows' milk, skimmed. The cheeses are from 18 to 22 inches in diameter, 3 to 4 inches high, and weighs from 22 to 40 pounds.

CHEDDAR.

This cheese is so named from the village of Cheddar in Somersetshire, England, where it was first made. It is comparatively an old cheese, though the genuine Cheddar process as it is now known is not old. It is an exceedingly popular variety, being much used as a food product in America and England, and is probably the most important of all cheeses as regards the quantity made annually. As used at the present time, the term Cheddar applies usually to a process of making rather than to any particular shape of cheese. The name, however, is occasionally used to designate a certain size of cheese 14 or 16 inches in diameter, and weighing from 60 to 100 pounds. Cheese made by the Cheddar process has, however, many different shapes with distinguishing names, such as Flats, which have the same diameter as the Cheddar size, but weigh only 30 or 40 pounds; Daisies, which are 12 inches in diameter and weigh 20 pounds; Young Americas, which are 8 inches in diameter and weigh 8 to 12 pounds; Long Horns, which are 5 inches in diameter and weigh 12 pounds; and Squares, which are of various sizes and usually 3 or 4 inches thick. The cheese may be white or colored yellow, and it may be almost fresh or thoroughly ripened and broken down. It is made from sweet, skimmed, unskimmed, or partly skimmed milk of cows. When made of unskimmed milk it is called "full cream"; when otherwise, it is called "part skim" or "skim."

The milk, morning's and evening's mixed, is set at 85° F. with sufficient rennet to coagulate to the proper point in from 25 to 40 minutes. At the time of setting the milk should have an acidity of about 0.18 or 0.20 per cent. Color may or may not be used. The curd is cut when it breaks evenly before the finger. The cutting is done with curd knives made up of blades set about one-third of an inch apart in frames. In one frame the knives are set perpendicularly and in the other horizontally. When well cut the curd is in uniform cubes of about one-third of an inch.

After cutting, the curd is heated slowly and with continued stirring until it reaches a temperature of from 96° to 108° F. With the use of mechanical agitators, as is the common practice, the curd should be heated about 4° higher than when stirring is done by hand. After heating, the stirring is continued

intermittently until the curd is sufficiently firm. This is determined by squeezing a handful, which should fall apart immediately on being released. The whey is then drawn. At the same time the acid should have reached about 0.20 per cent, or one-fourth of an inch, on the hot iron, which latter is determined by measuring the length of strings when the curd is touched to a hot iron. The curd is then matted about 4 inches deep, sometimes in the bottom of the vat, sometimes on racks covered with a coarse linen cloth. After it has remained there long enough to stick together it is cut into rectangular pieces easy to handle, which are turned frequently and finally piled two to four deep; in the meanwhile the temperature of the curd is kept at about 90° F. When the curd has broken down until it has the smooth feeling of velvet, which requires from one to three hours, it is milled by means of a machine, which cuts it into pieces the size of a finger. It is then stirred on the bottom of the vat until whey ceases to run, which requires from one-half to one and one-half hours, when it is salted at the rate of 2 or 2½ pounds of salt to 100 pounds of milk. It is then ready to be put into the press. The curd is put into tinned-iron hoops of the proper size, which are lined with cheesecloth bandages. The hoops are put into presses and great pressure is applied by means of screws. The next morning the cheese is removed from the hoops and put on shelves in a curing room. Formerly it was kept in a curing room as long as six months, but at the present time it is covered with a coat of paraffin and put into cold storage when from 3 to 12 days old. There is a growing demand on the part of consumers for mild cheese, and consequently ripening must be carried on at a temperature below 50° F.

An important point in the process of manufacturing Cheddar cheese is the development of the desired quantity of acid. A maximum quantity in the whey that can be developed without injuring the texture of the cheese is aimed at, and the proper breaking down of the curd before milling and salting is attributed to the acid. It is very probable that too much weight has been placed on the desirability of a maximum development of acid, and that practically as good cheese can be produced without the high acid.

Some of the details in the manufacture of Cheddar cheese are varied to some extent, and other names may be used to designate the cheese so made. A stirred-curd cheese is one in which the curd particles are not allowed to mat together after the whey is drawn. The curd is stirred occasionally to prevent this matting process, but it differs from the sweet-curd cheese, as acid is allowed to develop before salting and pressing. Formerly there was a comparatively large quantity of stirred-curd cheese made, but very little, if any, is made at the present time.

A washed-curd cheese varies from the regular Cheddar process in having the milled curd subjected to cold water for a short period. This process is evidently practiced to force the curd to take up a small percentage of the water and increase the yield. It results in a cheese which apparently breaks down or ripens much more rapidly than cheese made in the ordinary way. This ripening is very likely not due to the excess of moisture, but to some other unexplained reason. Some States have prohibited the use of the State brand on washed-curd cheese.

CHESHIRE.

This cheese is one of the oldest and most popular of the English varieties. It is a rennet cheese made from cows' milk, unskimmed, and is named for Chester County, England, where it is largely produced. It is made in cylindrical shape, from 14 to 16 inches in diameter, and weighs from 50 to 70 pounds. In making this cheese sufficient annatto is used to give the product a very high

color. The process of manufacture varies in detail in different sections. Perfectly sweet milk, night's and morning's mixed, is set at a temperature of from 75° to 90° F. The curd is cut in one hour, usually with an instrument in which knives are set in a frame to cut cubes 1 or 1¼ inches square. This is pushed down through the curd and finally worked back and forth at an angle. This is continued for about an hour, or until the particles of curd are the size of peas. The curd is then allowed to settle and mat on the bottom of the vat for about an hour, when it is rolled up to one end, weighted down, and the whey drawn, after the desired degree of acidity has been obtained. The curd is cut in pieces the right size to handle and is piled on racks. It is then run through a curd mill, salted at the rate of 3 pounds to 1,000 pounds of milk, and put into a hoop having a number of holes in the side, through which skewers can be thrust into the cheese to promote drainage. The cheese in the hoop is put into a heated wooden box called an oven, and sometimes light pressure is applied, the pressure increasing gradually until it reaches about 1 ton. The curing cellar or room is about 60° to 65° F. The time required for thorough ripening is from 8 to 10 months.

CHESHIRE-STILTON.

This is a combination of the Cheshire and Stilton varieties of cheese, in which the general characteristics of size and shape and manufacture of the Cheshire are retained, and a growth of the mold peculiar to Stilton is secured. The mold is produced by keeping out each day a small portion of curd and mixing it with some in which the mold is growing well.

CHHANA.

This is a sour-milk cheese made in Asia from cows' milk, unskimmed.

CHIAVARI.

This is a sour-milk cheese made in the region of Chiavari, Italy, from whole milk of cows. It is also known as Cacio Romano. A hard, rennet cheese made in the same region is also known by this name.

CLUB.

This cheese very probably originated in the United States. It is prepared usually from well-ripened Cheddar cheese by grinding very fine and mixing with butter, condiments, spirits, etc. In the past, when prepared commercially, it has been put into small porcelain jars. At the present time much of it is wrapped in waxed paper and foil and is called "Snappy" cheese. Sometimes pimientos are mixed with this cheese, when it is called pimiento cheese. The factories add no butter in the standard brands of Club cheese.

COMMISSION.

This cheese is made in Holland and resembles Edam in the process of manufacture, but it has a slightly different shape, being flattened at the ends. It is said to be made from cows' milk, whole.

COOKED.

This kind of cheese is so called because in its manufacture the curd is heated to the melting point. It is made from fresh curd prepared by breaking up and heating the curd of sour, clabbered milk. When cooled sufficiently the curd is placed in a receptacle and allowed to stand for three or four days until it has

become colored throughout. It is then put into a kettle over a fire; salt, milk, and usually caraway seed are added, and the whole is stirred vigorously until it becomes of the consistency of thick molasses, or until it strings when a spoon is withdrawn from it. The mass can then be put into molds to remain until it becomes cold, or placed in a vessel for keeping. It gets hard with cooling and will retain the shape of the mold.

Cooked cheese, made in northern Germany, is called Topfen, and a similar product made in Sardinia is called Freisa, and Paneddas. The same kind of cheese made in Belgium is called Belgian cooked cheese. Similar kinds are made in other countries.

COTTAGE.

This is a sour-milk cheese made extensively in this country, where it is often called Dutch cheese, or Smearcase. It is manufactured usually in a very small way, but occasionally it is made in large factories. Skim milk is allowed to sour, and the curd is then broken up and held at a temperature of about 100° F. for about half an hour, or until it has become sufficiently firm. The whey is then drained off and the curd placed under slight pressure for a certain time. The curd is either consumed immediately or is packed in tubs and placed in cold storage. Sometimes it is made up into shapes and wrapped in tin foil. It is prepared for eating by moistening with either milk or cream. No ripening is ever allowed.

COTHERSTONE.

This is a rennet cows' milk cheese made in Yorkshire, England, and resembles the well-known Stilton cheese of that country. It is a local product manufactured only on a small scale. It has also been known as Yorkshire-Stilton.

COULOMMIERS.

This is a small-sized Brie cheese, 5 or 6 inches in diameter, 1 inch in thickness, and weighs about 1 pound. It is made in the region of Coulommiers, France.

CREAM.

Genuine cream cheese is made from a rich cream thickened by souring, or from sweet cream thickened with rennet. This is put into a cloth and allowed to drain, the cloth being changed several times during the draining, which requires about four days. It is then placed on a board covered with a cloth, sprinkled with salt, and turned occasionally. It is ready for consumption in from 5 to 10 days.

Another variety of cream cheese is made from cream with a low content of fat (6 or 8 per cent). One per cent of a lactic-acid starter is added to the cream, and after warming the mixture to 70° F. and thoroughly stirring, rennet is added at the rate of from 1 to 1½ ounces of commercial liquid rennet to 1,000 pounds of cream. Usually the cream is placed in shotgun cans holding about 30 pounds each. After setting for about 18 hours, the curd is poured, with as little breaking as possible, upon draining racks covered with cloths. After a few hours' drainage the cloths are drawn together, tied, placed upon cracked ice, and allowed to remain overnight. The curd is then pressed, salted, and worked to a paste by means of special machinery or by suitable substitutes. The cheese is then molded into pieces weighing from 3 to 4 ounces, wrapped in tin foil and, without curing, placed upon the market. The standard package of cream cheese is 3 inches by 2 inches by 1 inch. It is a mild, rich cheese which is

relished most when eaten a few days after it is made. Cream cheese is now quite extensively made in the larger factories of the United States, where the ever-increasing demand for it makes it one of the most popular varieties of soft cheese.

A so-called double-cream cheese, known in France as Fromage Double Crème, is made by coagulating a mixture of milk and cream, putting it into a cloth, and allowing it to drain thoroughly, when it is salted, kneaded, and molded into any desired shape. It is eaten fresh. The Gervais is a cheese of this kind.

A French cream cheese, Fromage à la Crème, is prepared by mixing sweet cream with well-ripened sour-milk curd or rennet curd. Another French cream cheese, which contains considerable salt as a preservative, is known as Demi-sel.

CREUSE.

This is a skim-milk, farm cheese made in the department of the same name in France. Coagulation is produced either by the addition of a small quantity of rennet or by heating the sour milk. When set with rennet, the period required is usually 12 hours. The curd is put into earthenware molds about 7 inches in diameter and 5 or 6 inches in height, the bottom and sides being perforated. After draining for several days the cheese is removed from the molds, salted, and frequently turned. In time it becomes very dry and hard and may be preserved for a year or even longer. The cheese is also ripened by placing in tightly closed receptacles lined with straw, in which case it becomes yellow and soft and acquires a very pronounced taste.

CRISTALINNA.

This is a hard, rennet cheese made from cows' milk in the Canton of Graubunden, Switzerland.

DAMEN.

This is a soft, uncured, rennet cheese made from cows' milk in Hungary and is much in demand in the markets of Vienna. It is sometimes known as Gloire des Montagnes.

DANISH EXPORT.

This cheese is made in some of the creameries of Denmark to furnish an outlet for the skim milk and the buttermilk. In the process of manufacture as high as 15 per cent of fresh buttermilk is added to the skim milk. The mixture is set at 98° F., with sufficient rennet to coagulate it in 25 minutes. The curd is carefully and evenly cut, stirred for a few minutes, dipped into forms having rounded bottoms, kneaded, pressed down, and finally covered with a board upon which a weight is placed. Twelve hours later the cheeses are placed in a brine tank for 24 hours, when they are taken out and covered with salt for a short time. They are then transferred to the ripening room, where the temperature is about 55° F., and are turned and wiped with a cloth every day for five weeks. The cheeses are small, flat, and cylindrical.

DERBYSHIRE.

This is a hard, rennet cheese made from cows' milk, whole, in Derbyshire, England. It is cylindrical in shape and about the size of the Cheshire, though often smaller. It is made usually in farm dairies, and because of this fact the size varies with the size of the herd. The quality also varies to such an extent that very few really good cheeses can be found. Night's milk in which the

development of acid has been prevented as much as possible is mixed with the morning's milk, and the whole is set at a temperature of 80° F. The setting period is one hour, and the curd is allowed to become very firm before cutting. It is cut to the size of a pea and after being allowed to settle is piled in the center of the vat, where, after the whey is removed, it is subjected to light pressure. The curd is cut and again piled and heavier pressure applied. This is repeated until the curd reaches a certain degree of firmness, when it is run through a mill and salted at the rate of 1 pound of salt to 1,000 pounds of milk. It is then put into a press for one hour, when it is removed and the surface of the cheese scalded for one minute in water heated to 150° F. It is put back into the press for five hours, the pressure applied being gradually increased, when it is salted on the surface and again pressed. The pressing continues for three days, the cheese being salted each day. The curing room is kept preferably at 60° F., and the time required for curing is from three to four months.

A cheese called Gloucester, made in the county of Gloucester, England, is said to be identical with Derbyshire cheese. Double Gloucester is identical with single Gloucester in all respects but size. It is twice as thick as a single Gloucester; hence the name. Wiltshire, Leicestershire, and Warwickshire cheeses belong to the Derbyshire type.

DEVONSHIRE CREAM.

In making this cheese the cream is allowed to rise for several hours, when the milk with the layer of cream is scalded. It is then set away for a short time in order that the layer of cream may harden. The cream is then put into small molds and placed upon straw mats to drain. After becoming hard enough to retain its shape, it is ready for market.

DORSET.

Dorset, or Dorset Blue, or blue Vinny, belongs to the group of hard-pressed cheeses, deriving its name from the county in England where it was first made, and also from the blue mold which develops as the cheese ripens. Its manufacture has been traced back 150 years in the family of F. E. Dare, who says that in all probability it was made longer ago than that.

DOTTER.

This cheese is said to have been made by G. Leuchs, in Nürnberg, by mixing the yolk of eggs with skim milk and making this mixture into cheese in the usual way.

DRY.

This cheese, known also as Sperrkäse and Trockenkäse, is made in the small dairies of the eastern part of the Bavarian Alps and in the Tyrol. It is an extremely simple product, made for home consumption, and only in the winter season, when the milk can not be profitably used for other purposes. As soon as the milk is skimmed it is put into a large kettle which can be swung over a fire, where it is kept warm until it is thoroughly thickened from souring. It is then broken up and cooked quite firm. A small quantity of salt and sometimes some caraway seed are added, and the curd is put into forms of various sizes. It is then placed in a drying room, where it becomes very hard, when it is ready for eating.

DUEL.

This is a soft-cured, rennet cheese made from cows' milk. It is an Austrian product, 2 by 2 by 1 inches in size.

DUNLOP.

This was formerly the national cheese of Scotland, but it has been almost superseded by the Cheddar, which it resembles.

EDAM.

This is a hard, rennet cheese produced in Holland; it is also known as Katzenkopf, Tête de Maure, and Manbollen. The best of the product is made of cows' milk, unskimmed, but much of it at the present time is made from milk which has had at least one-half of the fat removed. The cheeses are round and are colored deep red on the surface or wrapped in tin foil.

The perfectly fresh milk is set at 90° or 95° F. Color is added, and sufficient rennet is used to coagulate the milk in 15 minutes. The curd is cut and after a very short stirring is allowed to settle to the bottom, when the whey is dipped off. The curd is gathered in a pile, and pressure is applied for a short time to expel the whey. Care is taken in the meanwhile that the curd does not get below 82° or above 90° F. The curd is then ready for the press. Sometimes wooden molds are used, but the best are made of iron. An attempt is made to put just sufficient curd into the mold to make a perfect sphere when pressed. When the mold is half full a little salt is added; when it is full, the cheese is pressed lightly until it will hold its form, when it is taken out and immersed in water for two minutes at 125° F. The cheese is then put into the press, where it remains for 12 hours. It is then removed from one mold and placed in another form resembling the mold, but without a cover, and having a hole leading from the bottom. The cheese is salted by rubbing salt on the surface. Sometimes it is kept in a salt bath for a day before putting salt on the surface. Following the salting, the cheese is washed in hot whey, and the surface is scraped smooth. It is then taken to the ripening cellar, which should have a temperature of between 50° and 70° F. Here it is turned daily for a time and finally twice a week. In the meantime it is occasionally moistened with cold water or fresh beer. When the cheese is one month old it is washed in water at 70° F. for 20 minutes and then placed in the sun to dry, after which it is rubbed with linseed oil. Before shipping, the cheese is colored, usually red, but for some markets it is colored yellow with annatto. The red coloring is done with a watery solution of litmus and Berlin red, or with carmine. A considerable quantity of this cheese is imported into the United States. At the present time Holland exports some Edam cheeses inclosed in air-tight tins.

EGG.

Egg cheese, made in the Province of Nyland, Finland, described by Prof. Casta Grotenfelt and reviewed by Monrad in Hoard's Dairyman, is made from fresh eggs, from 2 to 12 added to 6 quarts of new milk. Usually they are whipped into a starter, but sometimes half of them are added before coagulation and the other half after drawing the whey. The best are made with a cream starter. Monrad appears to be rather skeptical about this kind of cheese and says it should be labeled "Egg cheese" in order not to deceive the public.

ELBING.

This is a hard, rennet cheese made from cows' milk in West Prussia; in winter the milk is skimmed, but at other times it is used whole. It is known also as Werderkäse and Niederungskäse. Rennet enough is added to the milk at a temperature of 80° F. to coagulate it in from 15 to 30 minutes. The curd is cut

and cooked to 100° F., salted in the granular state, and pressed for 12 hours. A cheese is 10 or 20 inches in diameter and 3 or 4 inches in thickness. Ripening requires about one month at a temperature of 75° F.

EMMENTAL.

This is a hard, rennet cheese made from cows' milk, unskimmed, and has a mild, somewhat sweetish flavor. It is characterized by holes or eyes which develop to about the size of a cent in typical cheeses and are from 1 to 3 inches apart. Cheese of the same kind made in the United States is known as Domestic Swiss, and that made in the region of Lake Constance is called Algau Emmental. Other local names are Bellunese, Formaggio Dolce, Fontine d'Aosta, and Thraanen.

Emmental cheese originated in Canton Bern, Valley of Emmental, Switzerland, and is a very old variety. In the middle of the fifteenth century a cheese probably of this type was manufactured in the Canton of Emmental. In the middle of the seventeenth century the industry was well developed, and genuine Emmental cheese was exported. In 1722 its manufacture under the name of Gruyère is recorded in France, two cooperative societies having been organized for the purpose.

Emmental cheese is now manufactured in every civilized country. In the United States there are many factories, principally in Wisconsin, New York, and Ohio. In Switzerland the greater part of the milk produced is made into this product, and large districts in France and northern Italy are devoted to its manufacture. The best of the product made in Switzerland is exported, about 5,000,000 pounds coming to the United States annually. The imported cheese sells in this country at about 25 cents a pound wholesale, and the domestic cheese sells at about 14 cents. Practically as good cheese can be manufactured in the United States as in Switzerland, but prejudice, combined with the fact that much of the domestic product is sold as imported, has held the price at a low level.

There is a slight difference in manipulation of the milk in making Emmental cheese in this country as compared with Switzerland. In the latter country the evening's and morning's milk are made up together, while in the United States it is popularly believed that the evening's milk must be made into cheese immediately after milking, as is done with the morning's milk.

In making the cheese in Switzerland the evening's milk is skimmed; the fresh morning's milk is heated to 108° or 110° F., and the cream from the evening's milk is added and well stirred in. The evening's milk cooled with a little saffron to color it, is then added, and the whole is mixed. The milk is then brought to a temperature of 90° F. in summer and 95° F. in winter, and sufficient rennet is added to coagulate the milk in 30 or 40 minutes. The whole process is carried through in a huge copper kettle holding 300 gallons. The rennet used is the calf's stomach soaked in whey for 24 hours. When the milk has thickened to almost the desired point for cutting, which is practically the same as for ordinary American or Cheddar cheese, the thin surface layer is scooped off and turned wrong side up. This is supposed to aid in incorporating the layer of cream with the cheese. The curd is then cut very coarse by means of a so-called harp. The cheesemaker, with a wooden scoop in each hand, then draws the mass of curd toward him, that lying on the bottom of the kettle being brought to the surface. At this point the cheesemaker and an assistant commence stirring the curd with the harp, a breaker having first been fitted to the inside of the kettle to interrupt the current of the whey and curd. The harps are given

a circular motion and cut the curd very fine—about the size of wheat kernels or smaller.

After this stage is reached heating is commenced. In Switzerland until recently all the heating was done over an open fire, the kettle being swung on a large crane; most of the factories have the same method at the present time. In this country the same method was followed in the early days of the industry, but at the present time inclosed fireplaces, into which the kettle can be swung and doors closed to retain the heat, are largely employed. This takes away much of the discomfort of the operation. In a few instances the kettle is set in cement and an iron car containing the fire is run under it. The more modern factories use steam, which appears to be the most satisfactory way. When the heating is begun the contents of the kettle are brought rapidly to the desired temperature, which may be from 126° to 140° F., the higher temperature often being necessary to get the curd sufficiently firm. In the meanwhile the stirring continues for about one hour, with slight interruptions near the end of the process, when the curd has become so firm that it will not mat together. The end of the cooking is determined by the firmness of the curd, which is judged by matting a small cake with pressure by the hands and noting the ease with which the cake breaks when heating the edge.

When the curd is sufficiently firm, the contents of the kettle are rotated rapidly and allowed to come to a standstill as the momentum is lost. This brings all the curd into a cone-shaped pile in the center of the kettle. One edge of a heavy linen cloth resembling burlap is wrapped around a piece of hoop iron, and by this means the cloth is slipped under the pile of curd. The mass of curd is then raised from the whey by means of a rope and pulley and lowered into a cheese hoop on the draining table. These hoops are from 4 to 6 inches deep and vary greatly in diameter. The cloth is folded over the cheese, a large follower is put on top, and the press is allowed to come down on the cheese. The press is usually a log swung at one end and operated by a double lever. Pressure is continued for the first time just long enough for the curd mass to retain its shape. The hoop is then removed, the cheese turned over, and a dry cloth substituted. The cheese is allowed to remain in the press about 24 hours, during which time it is turned and a dry cloth substituted several times (six or more).

At the end of the pressing, the curd should be a homogeneous mass without holes. The cheese is then removed to the salting board, covered with a layer of salt, and occasionally turned. In a day or two it is put into the salting tank in a brine strong enough to float an egg; it remains there at the discretion of the cheesemaker for from one to four days. Often no brine tank is used with Emmental cheese.

The cheese is then taken to the curing cellar. In the best factories two or more cellars with different temperatures are available, and the cheeses are placed in them according to the way the cheesemaker thinks their development requires. If it appears that the cheese may develop too fast and have too many and too large eyes, it is placed in a cool cellar; if the reverse is true, a warm cellar is selected. The cellars vary in temperature from 55° to 65° F., though in extreme cases 70° F. or a little higher may be used. While the cheeses are in the ripening cellar, which in Switzerland may be from 6 to 10 months or longer, and in the United States three to six months, they should be turned and washed every other day for the first two or three months and less often subsequently, and at the same time a little coarse salt is sprinkled on the surface. In a few hours this salt has dissolved, and the brine is spread over the surface with a long-handled brush.

The cheeses are very large, about 6 inches in thickness and sometimes as much as 4 feet in diameter, and weigh from 60 to 220 pounds. In shipping, a

number of them are placed in a tub which may contain 1,000 pounds of cheese. Sometimes Emmental cheese is made up in the form of blocks instead of the shape of millstones. The blocks are about 28 inches long and 8 inches square in the other dimensions.

ENGADINE.

This is made in the Canton of Graubünden, Switzerland, and is a rennet cheese made from cows' milk, unskimmed.

ENGLISH DAIRY.

This name is applied to a very hard cheese, made in the same general way as Cheddar, but cooked much more. It has been made mostly in the United States and is used for culinary purposes.

ÉPOISSE.

This is a soft, rennet cheese made from whole or partly skimmed milk in the Department of Côte d'Or, France.

ERIWANI.

This cheese usually is made in the Caucasus from sheep's milk. The fresh milk is set at about 95° F., with sufficient rennet to coagulate it in 20 minutes. The curd is broken up, and the whole is put into a sack, allowed to drain, and then pressed with stones until the whey stops running. The cheese is salted in brine. Different local names are given to this product, Karab, Tali, Kurini, Elisavetpolen, and Kasach being mentioned.

ERVY.

This is a soft whole-milk, rennet cheese resembling Camembert and deriving its name from the village of Ervy, in the Department of Aube, France. It is about 7 inches in diameter, 2½ inches thick, and weighs about 4 pounds.

FARM.

This cheese, made in France, and known variously as Fromage à la Pie, Mou, Maigre, and Ferme, is essentially the same as our cottage cheese. The method of making is very simple. When the skimmed milk has become curdled, the whey is poured off and the curd kneeded and molded into various sizes and shapes. Draining is sometimes hastened by placing a board and weight upon the curd. Salt and sometimes sweet cream are added. The cheese is consumed usually on the farm where made, either while fresh or after it has undergone fermentation.

FILLED.

Filled cheese is the name applied to cheese from which the butterfat has been removed and foreign fats added. The foreign fat is added by stirring it violently in the milk and setting with sufficient rennet to coagulate quickly. The rest of the manufacture is the same as for Cheddar cheese. For a number of years filled cheese was very extensively manufactured in the United States, but State and Federal laws have made it no longer practicable. Many of the European varieties of cheese are counterfeited or adulterated in the same manner.

FLOWER.

This cheese is so named because it is made with the addition of the petals of various kinds of flowers, such as roses or marigolds. It is a soft-cured rennet cheese made in England from cows' milk, whole.

FOREZ.

This cheese, sometimes called d'Ambert, is made in central France. The process is said to be very crude and the ripening unusual. The cheeses are cylindrical in shape, 10 inches in diameter and 6 inches high. They are ripened by placing them on the floor of the cellar, covering them with dirt, and allowing water to trickle over them. Many are spoiled by the unusual growths of mold and bacteria. The flavor of the best of them is said to resemble that of Roquefort.

FORMAGELLE.

This is a small, soft-ripened rennet cheese made from cows' milk in the northwestern part of Italy.

FORMAGGINI.

This name is applied to several kinds of small Italian cheeses. The kind designated Formaggini di Lecco is a small, cylindrical dessert cheese, weighing about 2 ounces, made in the region of Lecco, in Lombardy. It is consumed while fresh and sweet and at all stages of ripening until it becomes very piquant. Sometimes salt, pepper, sugar, and cinnamon are mixed with it, and occasionally oil and vinegar are added. The method of manufacture is not essentially different from that of other soft cheeses. At times cows' milk is used with the addition of some goats' milk. Rennet is added to the warmed milk, which is then allowed to stand for 24 hours at a temperature of about 55° F. The curd, with as little breaking up as possible, is allowed to drain for three or four hours, when it is salted and put into cylindrical molds about $1\frac{1}{4}$ inches in diameter and 2 inches high.

FROMAGE FORT.

Several kinds of cooked cheese prepared in France are known by this name. In the Department of Ain, Fromage Fort is prepared by melting well-drained skim-milk curd, putting the melted mass into a cloth, and subjecting it to pressure and afterward burying it in dry ashes in order to remove as much of the whey as possible. The mass is then grated fine and allowed to ferment for 8 or 10 days, after which milk, butter, salt, pepper, wine, etc., are added to it, and the mixture is allowed to undergo further fermentation.

Canquillote, Cancoillotte, or Fromagère, prepared in the eastern part of France, is a cheese of this kind, as is also the Fondue, or cooked cheese, of Lorraine.

FRÜHSTÜCK.

This is a Limburg type of cheese, made in round shape about $2\frac{1}{2}$ or 3 inches in diameter. It goes also by the name Breakfast or Lunch cheese.

FTINOPORINO.

This is a Macedonian cheese similar to Brinsen, and is made from sheep's milk.

GAMMELOST.

Gammelost is made in Norway from skimmed sour milk. The milk is cooked or warmed in a kettle and allowed to stand for one hour, while the precipitated casein gathers at the bottom. This is taken up in a cloth, and the whole is put

into a form where light pressure is applied. The cheese, still in the cloth in the form, is put into the hot whey for an hour, when it is again placed under pressure for a short period. It is then put into a warm place and turned daily. At the end of 14 days it is packed in a chest with wet straw. The cheeses vary in weight from 24 to 65 pounds each.

GAUTRAIS.

This is a cylindrical cheese weighing about 5 pounds and very closely resembling Port du Salut. It is made in the Department of Mayenne, France.

GAVOT.

This cheese is made from cows', sheep's, or goats' milk in the Department of Hautes-Alpes, France.

GEHEIMRATH.

This is a deep-yellow-colored cheese made in small quantities in Holland and resembles a small Gouda cheese in quality and process of manufacture.

GÉROMÉ.

This is a soft, rennet cheese made in the mountainous regions of the Vosges, France. The name is a corruption of Gérardmer, a village in the region where the cheese has been made for at least 60 years. The variety is very similar to Münster but not so well known.

Cows' milk is used almost exclusively to make this kind of cheese, though at times a little goats' milk is added. The fresh milk is set with rennet at a temperature of about 80° or 90° F. In about one-half hour after adding the rennet the curd is cut into rather large cubes and allowed to stand for about one hour, when the whey is dipped off. The curd is then put into cylindrical forms or hoops 6 or 7 inches in diameter. Formerly these were made of wood, one being placed upon another, making a total height of 14 or 15 inches. They are now being made also of tin and in various sizes. The cheeses are turned after 6 hours and again after 12 hours. During the next two or three days they are turned twice daily, the hoops being changed each time. A room temperature of between 60° and 70° F. is desired during this process. The cheeses are then salted, the quantity of salt used being from 3 to 3.5 per cent of the weight of the cheese.

The cheeses are then placed in a well-ventilated room for several days and when sufficiently dry are transferred to the curing cellar, where they are turned frequently and worked with warm salt water to prevent the growth of molds. Ripening requires from six weeks to four months, depending upon the size of the cheeses, which vary in weight from one-half pound to 5 pounds or more. Anise is sometimes incorporated with the curd before putting into the forms. This cheese when old often has a greenish appearance.

GERVAIS.

This is a French cheese made from a mixture of whole milk and cream. The mixture is set with rennet at about 65° F., the time required being about 12 hours. The curd is then inclosed in cloth and hung up to drain. When sufficiently dry it is salted and pressed into molds. The molds are soon removed, and the cheese is wrapped in paraffin paper. The cheese is usually consumed while fresh but may be kept for several days. Gervais is a cream cheese of the Neufchâtel group, made by the Maison Gervais, a French company with headquarters near Paris.

GEX.

This is a hard, rennet cheese made from cows' milk. It belongs to the class of blue or marbled cheese known in France as Fromage Persillé, which includes Sassenage, Septmoncel, and several other kinds resembling Roquefort. It is made principally in the southeastern part of France and derives its name from the town of Gex, in the Department of Ain, where the cheese has been made for at least 70 years. There has been little tendency for the industry to extend to other regions than that in which it originated, and even there it is said to be diminishing.

Rennet is added to the fresh milk as soon as possible after milking. The time allowed for coagulation is one and one-half or two hours. The curd is then broken up and stirred until the mass is in a semiliquid condition, when it is allowed to stand for about 10 minutes. After the curd has settled to the bottom of the vat the whey is drained off. The curd is then worked by hand, salted lightly, and put into hoops about 12 inches in diameter and 5 inches in height. In about one hour the cheese is turned and a disk and weight placed upon it. The turning is repeated three or four times a day, the hoops being removed at the end of the first day. After salting, the cheese is taken to the curing room, where it soon acquires a bluish appearance, due to the development of a penicillium. During the making this mold is not introduced into the interior of the cheese by means of mottled bread, as in the case of Roquefort cheese. The ripening process, which requires from three to four months, is completed in cellars or natural caves. A ripened cheese weighs from 14 to 15 pounds.

GISLEV.

This is a hard, rennet cheese made in Denmark from cows' milk, skimmed.

GLUMSE.

This cheese is made from sour, skimmed milk in western Prussia. The thickened milk is placed over a slow fire at about 105° F. and is cooked as long as any whey is expelled. The cooking may be done by pouring hot water into the milk. After cooking, the curd is removed from the whey with a perforated dipper and is allowed to drain in a hair sieve. Milk or cream is added to the cheese just before eating. This is evidently a cottage cheese.

GOATS' MILK.

There are a large number of goats'-milk cheeses, many of which are not designated by local names. In France some of these cheeses are known by the names Chevret or Chevrotin, in Italy as Formaggio di Capra, and in German-speaking countries as Ziegenkäse or Gaiskäsli. Among those in France to which local names have been attached are Gratairon, Lamothe, and Poitiers.

The Gaiskäsli is a soft cheese made in certain parts of Germany and Switzerland. The milk is set with sufficient rennet to coagulate it in about 40 minutes. The curd is then broken up, stirred, and dipped into cylindrical molds about 3 inches in diameter. This mold is filled sufficiently to make a cheese 1½ or 2 inches thick and weighing one-half pound. The mold is set on a straw mat which allows the whey to drain freely, and salt is sprinkled on the surface. In two days the cheese is turned, and the other surface is salted. The cheese requires about three weeks to ripen and is said to have a very pleasant flavor.

A kind of cheese is made in Norway by drying goats' milk by boiling, fresh milk or cream sometimes being added during the process.

GORGONZOLA.

This variety, known also as Stracchino di Gorgonzola, is a rennet, Italian cheese made from whole milk of cows. The name is taken from the village of Gorgonzola, near Milan, but very little of this cheese is now made in that immediate locality. The interior of the cheese is mottled or veined with a penicillium much like Roquefort, and for that reason the cheese has been grouped with the Roquefort and Stilton varieties. As seen upon the markets in this country the surface of the cheese is covered with a thin coat resembling clay, said to be prepared by mixing barite or gypsum, lard or tallow, and coloring matter. The cheeses are cylindrical in shape, about 12 inches in diameter and 6 inches in height, and as marketed are wrapped in paper and packed with straw in wicker baskets.

The manufacture of Gorgonzola cheese is an important industry in Lombardy, where formerly it was carried on principally during the months of September and October, but with the establishment of curing cellars in the Alps, especially near Lecco, the manufacture is no longer confined to those months.

The milk used in making this cheese is warmed to a temperature of about 75° F. and coagulated rapidly with rennet, the time required being usually from 15 to 20 minutes. The curd is then cut very fine, inclosed in a cloth and drained, after which it is put into hoops 12 inches in diameter and 10 inches high. It was formerly the custom to allow the curd from the evening's milk to drain overnight and to mix it with the fresh, warm curd from the morning's milk prepared in the same way. The curd from the evening's milk and that from the morning's milk, crumbled very fine, were put into hoops in layers with moldy bread crumbs interspersed among the layers. The cheese is turned frequently for four or five days, the cloths being changed occasionally, and is salted from the outside, the process requiring about two weeks. It is then transferred to the curing rooms, where a low temperature is usually maintained. At an early stage in the process of ripening, the cheese is usually punched with an instrument about 6 inches long, tapering from a sharp point to a diameter of about one-eighth inch at the base. About 150 holes are made in each cheese. This favors the development of the penicillium throughout the interior of the cheese. Well-made cheese may be kept for a year or longer. In the region where it is made, much of the cheese is consumed while in a fresh condition.

GOUDA.

This is a Holland cheese made from cows' milk whole or partly skimmed. It is round and weighs from 10 to 45 pounds. The milk, to which coloring matter has been added, is set at 91° F. with sufficient rennet to coagulate it in 15 minutes. The curd is cut or broken with a wooden scoop, a harp, or an American cheese knife. It is allowed to stand for a minute, and the whey is dipped off. Hot whey or hot water is poured on the mass of curd until the whole has reached a temperature of 104° to 110° F. When the curd squeaks or whistles if it is crushed between the teeth the whey or water is dipped off and the curd is stirred and piled where it will drain well. The curd is then thoroughly kneaded and sometimes lightly salted. After salting, the curd is put into round molds and placed in a press, where it remains for 24 hours with increasing pressure. The cheese is then salted, either by immersion in brine or by rubbing salt on the surface. The salting continues from four to eight days, after which the cheese is washed with hot whey and is transferred to the ripening cellar, where it is turned daily for several days and finally once a week until

ripened. In six or eight months it is ready for consumption. When the cheese is a few days old it is washed with water and colored with saffron. Some of this cheese is shipped to the United States. As seen in this country, each cheese is covered with an animal tissue said to be a bladder.

GOURNAY.

This is a soft, rennet cheese which derives its name from the village of Gournay in the Department of Siene-Inférieure, France, where it is made. It is about 3 inches in diameter and three-fourths inch thick.

GOYA.

This cheese is manufactured in the Province of Corrientes, in the Argentine Republic. Either whole or partly skimmed milk is used. It is heated to a temperature of 75° or 85° F. and coagulated with rennet in from 15 to 30 minutes. The curd is cut and put into sacks to drain, after which it is put into molds.

GRANULAR CURD.

This cheese resembles the genuine Cheddar-process cheese in all points, except that it is not matted and milled. As soon as the curd is cooked firm enough it is salted and pressed. Because no acid is developed between cooking and pressing, a little more acid may be allowed to develop before drawing the whey, and the curd should be cooked firmer.

GRAY.

This is a sour, skim-milk product of the Tyrol. When the milk is thickened, the curd is brought to a proper firmness by light heating and is then dipped into a cheesecloth, care being taken that the flocculent matter at the bottom of the kettle is thoroughly mixed with the rest of the curd in order to insure an even product. The curd is put under a press for 10 minutes, when it is broken up by hand or in a mill and salt and pepper are added. The curd is then put into forms or hoops, and to insure the proper ripening a little well-ripened, gray cheese, grated, is added, or bread crumbs with the characteristic mold growth are mixed with the curd as it is put into the forms. The forms are made in various shapes and sizes and are supplied with holes to facilitate drainage. The cheese remains in the forms under pressure for 24 hours and is then taken to the drying room, which has a temperature of 70° F. The length of time it should remain in the drying room is determined by the appearance of the cheese. It is then taken to the ripening cellar. When ripened, the cheese has a pleasant taste and a gray appearance throughout the entire mass.

GRUYÈRE.

This name is applied to Emmental cheese manufactured in France, the name originating from the Swiss village of Gruyère. The cheese was first mentioned in 1722, when two societies were reported to have been organized for its manufacture. The Gruyère cheese is made in three different qualities—whole milk, partly skimmed, and skimmed. It is usually made from partly skimmed milk, a fact that is supposed to distinguish it from Emmental, which is supposed to be made from whole milk. The manufacture of Gruyère cheese is an extensive industry in France, about 50,000,000 pounds having been manufactured annually the latter part of the last century.

GÜSSING.

This is an Austrian skim-milk cheese weighing from 4 to 8 pounds. It resembles very much the Brick cheese of the United States and is made in practically the same way.

HAND.

Hand cheese is so named because originally it was molded by hand into its final shape. It is a sour-milk cheese, very popular among German races, and manufactured in many countries.

The process of making varies in different localities, but in general is about as follows: The skimmed milk is mixed with buttermilk and put into a tinned vessel, where it is held at a favorable temperature for souring. When thick the curd is broken up by stirring and heated to 120° F. The cooking is continued for about three hours, and for the first hour of this time the curd is stirred thoroughly. After cooking, the whey is drained off and the curd is put into a mold for cooling. It is then ground fine in a curd mill, salt is incorporated, and in some kinds of caraway seed is added. The curd is then pressed into the desired shapes and sizes. The small cheeses are dried in a warm room and then transferred to the curing cellar, where they are kept on shelves until the ripening on the surface has commenced, when they are packed in boxes. The cheese has a very sharp, pungent odor and taste, which is very disagreeable to most people unaccustomed to it.

There are many local names for hand cheeses, among which are the following: Thuringia Caraway cheese; Ihlefeld, made in Mecklenburg; Livlander, made in Russia; Olmützer Bierkäse; Dresdener Bierkäse; Satz, made in Saxony; Tyrol sour cheese; Berliner Kuhkäse; and Alt Kuhkäse.

HARZ.

This is a hand cheese made in different sizes. It is $1\frac{1}{2}$ by $2\frac{1}{2}$ inches in diameter, from one-fourth to three-fourths inch in thickness and weighs one-fourth pound. In manufacture it is identical with hand cheese.

HAY.

This cheese, known as Fromage de Foin, is a skim-milk variety made in the Department of Seine-Inférieure, France. It derives its name from the fact that it is ripened on as freshly cut hay as possible, which gives a characteristic aroma to the cheese. In some respects it resembles a poor grade of Livarot. It is about 10 inches in diameter and 2 or 3 inches thick.

The milk is set with rennet at a temperature of 80° or 85° F. In about one hour the curd is cut and the whey removed; the curd is then pressed to remove as much of the whey as possible, after which it is pressed by hand into molds. After draining for about two days it is put into the drying room, where it remains for about three weeks, when it is taken to the curing cellar and buried in hay. After remaining there for from six weeks to three months it is ready for sale. The consumption of this variety is largely restricted to the region where it is made.

HOHENHEIM.

This is a soft cheese made in Hohenheim from partly skimmed milk. It is cylindrical in shape, 4 to 6 inches in diameter, and weighs about one-half pound.

The evening's milk skimmed is added to the morning's milk and heated in a copper kettle to 110° F. Some saffron is used for color and rennet is added.

In one or one and a half hours the curd is broken up and the whey dipped off. Caraway seed is stirred in, which reduces the curd to smaller particles. For easy draining it is dipped into tin hoops, having holes, where it remains 12 hours and an additional 12 hours on a drying board. It is then sprinkled with salt; when the salt is dissolved the curd is again salted and placed in the curing cellar. To ripen requires three months.

HOLSTEIN HEALTH.

This is a cooked cheese made from sour skimmed milk, the local name being Holsteiner Gesundheitskäse. The milk is heated lightly and the curd is strongly pressed; it is then well mixed and put into a tin kettle. A little cream and salt are added, and the whole is stirred while it is being heated to the melting temperature over a fire. It is then put into a hoop or mold, which holds about one-half pound, and is allowed to cool.

HOLSTEIN SKIM MILK.

As the name indicates, this is a skim-milk cheese made in the Province of Holstein, where it is known as Holsteiner Magerkäse. Usually in the manufacture of this cheese 6 per cent of buttermilk is added to separator skim milk. A part is heated to 166° F., and the remainder is mixed with the pasteurized portion. The milk is colored with saffron, and rennet powder is used for coagulating the casein, which requires about 35 minutes. The curd is then broken up and allowed to remain in the whey for 30 minutes without stirring. A cloth is then used for lifting the curd from the whey, and 1 per cent of salt is mixed in. The curd is pressed for one-half hour, when it is turned and pressed again. The pressure is gradually increased from 5 pounds to 9 pounds for each pound of cheese. The cheese is transferred to the curing cellar, which has a temperature of 60° F. It is there turned daily until ripened, which requires four months. Each cheese weighs from 12 to 14 pounds.

HOP.

Hop or Hopfen cheese is a German product. The ground curd is salted and allowed to ripen for three or four days, when it is mixed with fresh curd and molded into small cheeses measuring about 2½ inches in diameter and 1 inch in thickness. These cheeses are placed in a well-ventilated room and allowed to become quite dry, when they are packed in hops.

HVID GJEDEOST.

This is a goats'-milk cheese made in Norway. The milk is set at 70° F. or higher. The curd is broken up and cooked in the usual manner, after which it is pressed in forms 9 or 10 inches long, 6 inches broad, and 4 inches high. It is made only for local consumption.

ILHA.

Ilha is a Portuguese word meaning island, and is applied to the cows'-milk cheese made in the Azore Islands and imported quite extensively into Portugal. They are moderately firm cheeses, measuring 10 or 12 inches in diameter and about 4 inches in thickness.

INCANESTRATO.

This name is applied to cheese made in Sicily. The mixture of evening's and morning's milk is curdled with rennet in about three-fourths of an hour. The curd is then stirred thoroughly and 2 per cent of water added. After standing

for five minutes the curd is separated from the whey, pressed by hand, and sometimes allowed to ferment for two or three days, when it is cooked in whey and then pressed and salted. Various spices are added. A kind known as Majocchino, made in the region of Messina, of cows', goats', or sheep's milk, contains olive oil.

ISIGNY.

This is an American cheese originating about 40 years ago in attempts to make Camembert cheese in this country. The proper ripening for Camembert cheese was not obtained, and hence a distinct name was given to the product. The cheese is slightly larger than Camembert, but of the same shape. The ripened product bears a close resemblance to Limburg. The process of manufacture is similar to that of Camembert. During ripening, however, the cheese is washed and rubbed occasionally to check the growth of molds on the surface.

JACK.

Jack cheese was first made in Monterey County, Cal., about 35 years ago and was then called Monterey cheese. Its manufacture under that name is still limited to that State, but its method of manufacture agrees closely with the granular-curd method for Cheddar cheese. Morning's milk is mixed with evening's milk and warmed in a vat to from 86° to 88° F., and rennet extract is added at the rate of 6 or 8 ounces per 1,000 pounds of milk. No coloring matter is used. It is ready for the curd knife in about half an hour, its readiness being determined as in Cheddar cheese. The cutting is done with a curd knife, the product then being stirred by hand or by rake. The curd is heated to from 98° F. in winter to 105° or 110° F. in summer. After the temperature is up the cheese is stirred occasionally with the rake until the whey is drawn at 0.14 or 0.15 per cent acidity. The curd is then stirred thoroughly to keep it from matting and is salted at the rate of 1½ pounds to 100 pounds of curd, the whole being thoroughly stirred. During the salting process cold water is run under the vat, the hot water having been previously run off.

The curd, no hoops being used, is put into press cloths at a temperature of 80° or 85° F. One gallon of curd is put into each cloth, making a cheese weighing 6½ pounds. With one hand the corners of the cloth are caught up tight, the cheese being pressed and rolled with the other hand. The cheese is then pressed overnight and placed in the curing rooms for three weeks before being ready to ship.

JOCHBERG.

This cheese is made from a mixture of cows' and goats' milk in the Tyrol. The cheese weighs 45 pounds and is 20 inches in diameter and 4 inches high.

JOSEPHINE.

This is a soft-cured, rennet cheese made in Silesia from cows' milk, whole, and is put up in small cylindrical packages.

KAJMAK.

The Turkish word Kajmak signifies cream and is used to designate a product made in Servia and sometimes known as Servian butter. This product, however, is analogous to a cream cheese. The milk is boiled and put into large, shallow vessels, usually of wood, and allowed to stand for 12 hours, when the cream is removed and usually salted. The flavor varies greatly with the age

of the sample and is said to be between that of a goats'-milk cheese and Roquefort.

KARUT.

This is a very dry, hard, skim-milk cheese, made in Afghanistan and northwestern India.

KASCAVAL.

This is a loaf-shaped rennet cheese weighing from 4 to 6 pounds, made from sheeps' milk in Bulgaria, Roumania, and Transylvania. Goats' milk is sometimes added. Considerable quantities of the cheese are exported.

KATSCHKAWALJ.

This is a sheep's-milk cream cheese made in Servia. The milk is curdled with rennet, and the curd is drained and inclosed in tin cans which are put into boiling water. The curd is subsequently worked by hand and molded into various shapes. Ordinarily a cheese weighs about 6 pounds.

KJARSGAARD.

This is a hard, rennet cheese made in Denmark from cows' milk, skimmed.

KLOSTER.

This is a soft-ripened, rennet cheese made from unskimmed milk of cows. It has a somewhat unusual shape, 1 by 1 by 4 inches, and weighs less than one-fourth pound.

KOLOS-MONOSTOR.

This is a sheep's-milk, rennet cheese made in the agricultural school in Transylvania. The cheese is rectangular in shape, $8\frac{1}{2}$ by 5 by 3 inches, and weighs 4 pounds.

KOLOSVARER.

This cheese is made from buffaloes' milk, and when ripened is said to resemble Trappist cheese.

KOPPEN.

Koppenkäse is a goats'-milk cheese made in Germany. The milk is set at 80° or 85° F., and after the whey has been dipped off the curd is put into a cup-shaped vessel which gives form to the cheese and also the name. The cheese is placed in a warm room and sprinkled with salt. It is allowed to dry for from two to three days and is then placed in the ripening room. The ripened cheese weighs from 3 to 4 ounces, and has a sharp, pungent, slightly smoky flavor.

KOSHER.

This cheese under various names is made in several countries. It is a cows'-milk rennet cheese made for the Jewish trade. The process of manufacture resembles that of Limburg. The cheese, however, is eaten fresh.

KOSHER GOUDA.

This is a cheese made especially for the Jewish trade. It is identical with a Gouda cheese in every way except in size and in having no bladder covering. It weighs from 4 to 6 pounds and is $8\frac{1}{2}$ inches in diameter and 3 inches thick.

It bears a stamp by which the Jewish consumer identifies it. Small quantities are imported into this country.

KRUTT.

Krutt, or Kirgischerkäse, is made by the nomadic tribes of the middle Asiatic Steppes from sour skim milk of the cow, goat, sheep, or camel. When the milk coagulates, salt is added and the curd is hung up in a sack to drain, after which it is subjected to moderate pressure. The curd is then made up into small balls, which are placed in the sun to dry.

KUHBACH.

This is a soft-ripened, rennet cheese made from cows' milk, either whole or partly skimmed. It is a German product, made in upper Bavaria. It is cylindrical in shape, weighs 2 pounds, and is 6 inches in diameter and 3 inches high.

LAGUIOLE.

This is a hard rennet cheese varying but little, if any, from Cantal, and resembling Roquefort. It derives its name from the village of Laguiole in the Department of Aveyron, France. The cheese is made extensively in the mountains of Aubrac, where it is said to have been made at the time of the Roman occupation. The milk, either whole or partly skimmed, is set with rennet, the time allowed being about 30 minutes. The curd is allowed to ferment for about 24 hours and is then put into hoops and pressed. At least one month is required for ripening. Laguiole or Guiole cheese is considered superior to Cantal, although the two varieties are made in essentially the same way.

LANCASHIRE.

This is an English cheese, named from the county in which it is made. The evening's milk is partly skimmed and is heated, so that when the morning's milk is added the temperature of the whole is brought to 80° F., or slightly higher. Rennet enough is added to coagulate the milk in one hour. The curd is broken up, stirred for a short time, and pressed on the bottom of the vat by means of a heavy sieve. The whey is soon drained off, and the curd is ground in a curd mill into particles the size of kernels of corn and then put into the press. Salting is done in brine, in which the cheese is placed for from four to six days. From the brine tank the cheese is transferred to the curing room.

LANGRES.

This is a soft, rennet cheese made in the northeastern part of France. It derives its name from the village of Langres in the Department of Haute-Marne, where it is said to have been made since the time of the Merovingian kings. The perfectly fresh milk is set with rennet at a temperature of about 90° or 95° F. After standing for several hours it is put into cylindrical forms. The cheeses ripen for about two or three months. A ripened cheese weighs from 1½ to 2 pounds and is about 5 inches in diameter and 8 inches high. For the most part the cheese is consumed in the region where it is made.

LAPLAND.

The Laplanders make a variety of cheese from the milk of the reindeer. It resembles very much the harder varieties of the Emmental group. The cheese has a very unusual shape, being round and flat and so formed that a cross section resembles a dumb-bell with angular instead of round ends.

LATTICINI.

This is applied to cheeses made from the milk of buffaloes, particularly in the region of Naples, but also in other parts of Italy.

LEATHER.

Leather, Leder, or Holstein Dairy Cheese, is made in Schleswig-Holstein, from cows' milk, skimmed, with an addition of from 5 to 10 per cent of buttermilk.

The milk is set at from 95° to 100° F. and requires from 25 to 35 minutes for coagulation. It is then broken up with a harp or a stirring stick and is stirred with a Danish stirrer. When the particles are reduced to the size of peas, the curd is piled up on one side of the vat or kettle and allowed to stand for 10 minutes. The whey is then dipped off. The curd is cut with a knife into pieces the size of the hand, put into a wooden or tin bowl, and pressed for one-half hour, when it is cut into pieces and run through a cheese mill. It is then salted, put into a cloth, and again put into the press, where the pressure is gradually increased. The cheese is turned occasionally and a fresh, dry cloth supplied. After 12 hours of pressing the cheese is put into the salt bath, where it is kept from 40 to 48 hours. It is then transferred to the ripening cellar, where it is wiped with a dry cloth every day for about a week and thereafter twice a week, the ripening requiring about four months. The cured cheese has small eyes; it is cylindrical, is from 4 to 6 inches in height and 10 to 12 inches in diameter, and weighs from 15 to 25 pounds.

LEICESTER.

This is a hard, rennet cheese made from whole milk of cows. It is named from a county in England where it is made. It resembles the better known Cheshire and Cheddar in every way.

Evening's milk is mixed with morning's milk and set at a temperature of from 76° to 84° F. The curd is allowed to set very firm, which requires 90 minutes. It is cut very carefully and allowed to settle 20 minutes, when the whey is drawn off. The curd is then gathered in a cloth, pressed, and broken up several times until a certain degree of dryness has been attained, when it is salted lightly and put to press. Pressure is continued for five days, the cheese being removed and salted on the outside each day.

LESCIN.

This cheese is made in the Caucasus from sheep's milk, the sheep being milked directly into a sack made of skin. Rennet is added, the curd is broken up, and the whey drained off. The curd is put into forms and pressed lightly. After coming from the press the cheese is wrapped in leaves bound with ropes of grass. After 14 days it is salted and again covered the same as before.

LEYDEN.

This is a hard, rennet cheese made in Holland, where it is known also as Bergues, Delft, Komynde, Koejekaas, and Hobbe. The milk, which is either partly or entirely skimmed, is set with rennet at from 72° to 75° F. It is allowed to stand for one hour, when the curd is cut and then stirred while being warmed to 97° F. The heating is done by pouring hot whey over the curd. The curd is then dipped out with a cloth and kneaded by hand. Caraway seed is added to a portion of the curd which, in filling the hoops, constitutes the middle of three layers. The cheese is then put into press, turned after three

hours, and a fresh cloth applied. The pressing continues for 24 hours. Salting is done on the surface daily. If the rind becomes hard it is washed in whey or water, and occasionally milk is smeared on the surface, which is colored with litmus in alkaline water. A ripened cheese weighs about 25 pounds and is 12 inches in diameter and from 3½ to 5 inches in thickness. As seen on the American market, it has a very dark-brown surface.

LIEDERKRANZ.

This cheese is manufactured at Monroe, N. Y., under a copyright. It is about 1½ inches by 2½ inches in dimensions and about an inch thick. It is ripened by red-slime growth on the surface and somewhat resembles a Limburg in flavor.

LIMBURG.

This is a soft, rennet cheese made from cows' milk which may contain all the fat or may be partly or entirely skimmed. The best Limburg is undoubtedly made from the whole milk. This cheese has a very strong and characteristic odor and taste, weighs about 2 pounds and is about 6 by 6 by 3 inches.

The most common synonyms of Limburg are Backstein and Hervé. There are, however, many local names for it, such as Algau, Lanark, Marianhof, Morin, Saint Michels, Schützen, Tanzenberg, Carinthian, Grottenhof, Emmersdorf, Briol, and Lindenhof.

Limburg cheese originated in the Province of Lüttich, Belgium, in the neighborhood of Hervé, and was marketed in Limburg, Belgium. Its manufacture has spread to Germany and Austria, where it is very popular, and to the United States, where large quantities are made, mostly in New York and Wisconsin.

Sweet milk, without any coloring matter, is set at a temperature of from 91° to 96° F. with sufficient rennet to coagulate the milk in about 40 minutes. In foreign countries a kettle is used, but in the United States an ordinary rectangular cheese vat is found to be more satisfactory. The curd is cut or broken into cubes of about one-third of an inch and is stirred for a short time without additional heating. It is then dipped into rectangular forms 28 inches long, 5½ inches broad, and about 8 inches deep. These forms are kept on a draining board, where the whey drains out freely. When the cheese has been in the forms, with frequent turnings, for a sufficient length of time to retain its shape, it is removed to the salting table, where the surface is rubbed daily with salt. When the surface of the cheese commences to get slippery the cheese is put into a ripening cellar having a temperature of about 60° F. While in the cellar the surface of each cheese is frequently rubbed thoroughly. To ripen requires one or two months. When ripe the cheese is wrapped in paper, then in tin foil, and put into boxes, each containing about 50 cheeses.

Contrary to the popular belief, no Limburg is imported into this country at the present time. This type of cheese is made so cheaply and of such good quality in this country that the foreign make has been crowded out of the market.

LIPTAU.

This cheese is made in the Provinces of Liptau, Saros, and Arva, in Hungary, from sheep's milk. Condiments, especially red peppers, are usually added. It is rather greasy and has a sharp taste. The details of manufacture are the same as those for Brinsen cheese.

LIVAROT.

This is a soft, rennet cheese made from cows' milk more or less skimmed. It derives its name from the village of Livarot, in the Department of Calvados,

France, where the industry is centralized. This cheese has the advantage over Camembert, made in the same region, in that it may be manufactured and consumed during the warm months.

The milk is set with rennet at a temperature of from 95° to 104° F. After one and one-half or two hours the curd is cut and placed on a rush mat or a cloth and allowed to drain for about 15 minutes, during which time it is crumbled as fine as possible. It is then put into tin hoops or forms 6 inches in diameter and the same in height. The cheeses are turned very frequently until they become firm, when they are salted and left on the draining board for four or five days. At this stage they are sometimes sold as white cheese, but more often they are transferred to a well-ventilated room for 15 or 20 days and then to the curing cellar, which is kept very tightly closed. By thus retaining the ammonia and other products the cheese acquires a strong, piquant taste. During the process of ripening the cheeses are turned two or three times a week and occasionally wiped with a cloth moistened with salt water. After ripening for 10 or 12 days they are wrapped with the leaves of *Typha latifolia*, in France commonly called laiche. In from three to five months they are colored with annatto and marketed.

LORRAINE.

This is a small, sour-milk hard cheese made in Lorraine, Germany, where it is regarded as a delicacy. It is seasoned with pepper, salt, and pistachio nuts and is eaten in a comparatively fresh state. The cheeses are made in sizes of about 2 ounces and sell for a very high price—at the rate of about 50 cents a pound.

LÜNEBERG.

This cheese is made in the small valleys of the Voralberg Mountains in the western part of Austria. The art of cheesemaking in that locality was introduced from Switzerland, and the copper kettle and characteristic presses are used. Saffron is used for coloring, and the milk is warmed in the kettle to 87° or 90° F., at which temperature enough rennet is added to coagulate the milk in from 20 to 30 minutes. The curd is cut into pieces the size of hazlenuts and is cooked with stirring to a temperature of 122° F. The curd is dipped into cloths which are put into wooden forms and light pressure is applied. The curd remains in the press for 24 hours, during which time it is turned occasionally and a dry cloth supplied. The cheese is then taken to the cellar, salted on the surface, and occasionally rubbed and washed. When ripe it is said to be about midway in type between Emmental and Limburg.

MACONNAIS.

This is a goats'-milk cheese, 2 inches square by 1½ inches thick, made in France.

MACQUELINE.

This is a soft, rennet cheese of the Camembert type, 4 inches in diameter and 1¼ inches thick, made from whole or partly skimmed milk in the region of Senlis, in the Department of Oise, France. The milk is set with rennet at a temperature of about 80 F. and allowed to stand for five hours, when the curd is put into hoops. After 24 hours the hoops are removed and the cheese is salted and taken to the curing room, where it remains for 20 days or more. A cheese weighs about one-fourth of a pound and requires about 2 liters of milk in its manufacture. It sells at a lower price than Camembert, made in the same region.

MAIKÄSE.

This is a cheese resembling Gouda. It is made in Holland in the early summer, is softer than the regular Gouda, and hence can be marketed at an earlier period.

MAILE.

This a rennet, sheep's-milk cheese made in the Crimea. After cooking, the curd is allowed to drain into a cloth for two hours, when it is salted, made into forms, and put into salt water, where it is sometimes kept a year.

MAILE PENER (FAT CHEESE).

This cheese is made in the Crimea from sheep's milk. The milk is set at 100° F. with sufficient rennet to coagulate in from 15 to 30 minutes. The curd is broken up, the whey dipped off, and the curd allowed to drain for from two to six hours, in a linen cloth. It is pressed with a board and salted in brine. The ripened cheese, which will keep a year, has a crumbly, open texture and an agreeable taste.

MAINZ HAND.

This is a typical hand cheese, sometimes called Pimp. The milk is treated in the usual way, and the curd after cooling is thoroughly kneaded by hand, the thoroughness of this manipulation influencing the quality of the cheese. The curd is then pressed by hand into flat cakes and allowed to dry for a week, when they are packed in a jar or keg and placed in a cellar for ripening. This requires from 6 to 8 weeks.

MALAKOFF.

This is another form of Neufchâtel cheese, about 2 inches in diameter and one-half of an inch in thickness. It may be consumed either while fresh or after ripening.

MANUR.

This cheese is made in Servia from either sheep's or cows' milk. The milk is first heated to the boiling temperature and then cooled until the fingers can be held in it. A mixture of buttermilk and fresh whey with rennet is added. The curd is lifted from the whey in a cloth and allowed to drain, when it is kneaded like bread, lightly salted, and dried.

MAQUÉE.

This is a soft, rennet, brick-shaped cheese made from cows' milk in Belgium, where it is known as Fromage Mou.

MÄRKISCH HAND.

This cheese is similar to a hand cheese, the milk being treated in the same way as in hand cheese up to the salting. The curd is then put into a linen sack and heavy pressure is applied. The mass is then cut into oblong pieces and allowed to dry and cure as regular hand cheese.

MAROLLES.

This is a soft, rennet cheese of the Point l'Évêque type made from cows' milk, whole or partly skimmed, in the Departments of Aisne and Nord, France. There are several kinds, varying in size, shape, and details of manufacture, of

which the Larron and the Tuile de Flandre are best known. The cheese as made at Maroilles is about 6 inches square and 2 inches thick; that made at Saint Aubin is 5 inches square and 3 inches thick. The Larron is about 2¼ inches square and 1½ inches thick and weighs about 6 ounces, while the Tuile de Flandre is about twice as large. The Dauphin is semilunar in shape and contains herbs. A pear-shaped form, designated Boulette, may be made in part from buttermilk.

The best cheese is made from fresh, whole milk, although the most of it is made from milk partly or entirely skimmed. The temperature of setting with rennet is about 75° F. and the time allowed from one to four hours. The curd is drained for one or two hours in a box having a perforated bottom and is then put into square forms or hoops 5 or 6 inches on a side and 3 or 4 inches high. The cheese is turned frequently until firm and then salted on all six faces and taken to the curing cellar, where it is washed frequently with salt water to prevent the growth of molds. Ripening requires from three to five months. Defective cheeses are said to be common.

MASCARPONE.

This is a cheese about 2 inches in diameter and 2½ inches in height, and made in Italy. The cream is heated to about 194° F., and dilute acetic or tartaric acid is added. The mixture is stirred and drained through cloth, then put into molds, and eaten in a fresh condition.

MECKLENBURG SKIM.

This is a rennet cheese made from skim milk and named from the province in which it is made. The milk is placed in a copper kettle and warmed with steam. Saffron is added for coloring, and sufficient rennet is used to coagulate the milk in 30 minutes. The curd is broken up into particles the size of peas. The temperature is raised to 92° F. in 12 minutes. The curd is then removed from the kettle by means of a cloth, put into a hoop, and pressure applied. This is increased gradually until it reaches 15 times the weight of the cheese in 24 hours. The cheese is then placed in a drying room held at 70° F. until a rind is formed. As much salt as can be absorbed is then sprinkled on the surface. In the meanwhile the cheese is taken from the drying room and placed in the regular curing room, which has a temperature of 60° F. and a relative humidity of from 85 to 95 per cent.

MESITRA.

This is a soft, sheeps'-milk cheese made in the Crimea. The fresh milk is set with rennet in a copper kettle. After cutting, the curd is heated over a slow fire. The curd is dipped when comparatively soft and subjected to light pressure. The cheese is often eaten fresh and unsalted.

MIGNOT.

This is a soft, rennet cheese, either cylindrical or cubical in form. It has been made in the Department of Calvados, France, for more than 100 years and resembles Pont l'Évêque and Livarot. There are two types of this cheese, white and passé; the first, a fresh cheese, is made during the period from April to September, and the second, a ripened cheese, is made during the remainder of the year.

MINTZITRA.

This is a soft cheese made of sheep's milk in Macedonia.

MONTASIO.

This cheese originated in the part of Carinthia, in Austria, called Friaul, where the value of the annual product is very large. At the present time it is made not only in Carinthia but in the neighboring Provinces and in Italy.

The milk, either whole or partly skimmed, and consisting usually of a mixture of cows' and goats' milk, is heated in a kettle to 95° F., and sufficient rennet is added to coagulate it in 30 or 40 minutes. It is then cut very carefully to the size of peas and heated gradually to a temperature of 120° F. When the desired temperature is reached, which is usually in about one-half hour, heating is stopped and the stirring continued for 30 or 40 minutes. Some of the whey is dipped from the kettle, and the curd is removed by means of a cloth. The cheese is pressed for 24 hours, during which time it is turned frequently. The salting requires usually about one month, the total quantity applied varying from 2½ to 3 per cent of the weight of the pressed cheese. After salting, the cheese is taken to a well-ventilated room and allowed to dry. In this room the cheese is turned frequently and rubbed in order to free it from molds. When dry, it is scraped carefully and taken to the curing cellar, where it is rubbed frequently with a coarse cloth, and when the rind has become firm and does not show the presence of mold, olive oil is usually applied. Sometimes the rind is blackened by means of soot.

The fresh cheese is almost white. The old cheese becomes yellow, granular, and has a sharp taste and characteristic odor. It is usually eaten when from 3 to 12 months old, but may be kept much longer and then grated.

MONTAVONER.

This is a sour-milk cheese made in Austria. During the process of manufacture dried herbs (*Achillea moschata* and *A. atrata*) are added.

MONT CENIS.

This is a hard, rennet cheese resembling the imitation Roquefort varieties like Gex and Septmoncel and made in the region of Mont Cenis, in the southeastern part of France. The milk used is usually a mixture of cows', sheep's, and goats'. The evening's milk is usually skimmed and added to that of the morning. Primitive methods of cheesemaking are employed. The milk is set with rennet at a temperature of about 85° F. The curd is then cut and allowed to drain for 24 hours, when fresh curd is thoroughly mixed with it. The mixture is then put into molds and moderate pressure applied. After turning frequently for several days, and salting, it is transferred to the curing cellar, where it is turned frequently, washed with salt water to check the growth of molds on the surface, and allowed to ripen for three or four months. The ripening is due mainly to a penicillium which is sometimes incorporated into the curd by means of moldy bread. A ripened cheese is about 18 inches in diameter, 6 or 8 inches in height, and weighs about 25 pounds.

MONT D'OR.

This is a soft, rennet cheese of the Pont l'Évêque type, formerly made from goats' milk but now made almost exclusively from cows' milk. Sometimes a small quantity of goats' milk is added to the latter.

It derives its name from Mont d'Or, near Lyon, in the Department of Rhône, France, where it is said to have been made for more than three centuries. At the present time it is made not only in Rhône and neighboring Departments, but in other parts of France, especially Eure and Oise.

Whole or partly skimmed milk is set with rennet at a temperature of 90° or 100° F. The curd, in from one-half hour to two hours after the addition of the rennet in the milk and with or without cutting, is put into circular forms or hoops about 4½ inches in diameter and 3 inches high, which rest upon a draining board covered with straw. After about one hour the cheese is turned, and frequently thereafter, until firm. A disk with a light weight is sometimes placed upon each cheese in order to hasten the removal of the whey. The cheese is salted on the surface. It is also ripened for about one week in summer and two or three weeks in winter, during which time it is turned frequently and washed with salt water to prevent the growth of molds. Much of it is sold in a fresh condition.

MONTLHÉRY.

This is a soft, rennet cheese made from cows' milk in Seine-et-Oise, France. A large cheese is about 2 inches thick and 14 inches in diameter and weighs about 5½ pounds. There is also a smaller-sized cheese which weighs about 3 pounds. Either whole milk or partly skimmed milk is used. Rennet is added to it at ordinary temperatures, and the curd when sufficiently firm is broken up, put into molds, and subjected to pressure. After salting, the cheese is cured for from 8 to 15 days in a so-called drying room and then ripened in a cellar at a temperature of about 55° F. During the process of ripening the cheese becomes covered at first with a whitish mold and later with a blue mold in which red spots appear. After about one month it is ready for sale.

MOZARINELLI.

This is a soft, rennet cheese made in Italy from cows' milk.

MÜNSTER.

Münster is a rennet cheese of cows' milk unskimmed, made in the vicinity of Münster, in the western part of Germany near the Vosges Mountains. Similar cheese made in the neighboring portion of France is called Géromé, and Münster cheese made near Colmar and Strassburg is sometimes given the names of those two cities.

The milk is set at about 90° F. with sufficient rennet to coagulate it in 30 minutes. The curd is then broken up and allowed to stand from 30 to 45 minutes without stirring, when it is dipped with a sieve, which gives slight pressure to the curd and holds back the small particles. After removing the whey the curd is scooped into forms or hoops, and caraway or anise seed is usually added. The hoops are made in two parts, the lower being 4 inches high and 7 inches in diameter, with holes in the bottom for draining, and the upper of the same dimensions. The whole resembles an ordinary cheese hoop with bandages. The hoop is lined with cheesecloth. After the curd has been in the hoop for 12 hours the upper part of the latter may be removed, the cheese turned, and the cloth removed. The cheese is now put into the upper portion of the hoop and turned frequently for from four to six days. In the meanwhile the temperature is held at 68° F. After salt has been rubbed on the surface daily for three days the cheese is taken to the cellar, which has a temperature of from 51° to 55° F., where it is allowed to ripen for two or three months. When ripe the cheese sells for about 15 cents a pound.

MYSOST.

Mysost is made from whey, is a product of Norway, Sweden, and Denmark, and, to a very limited extent, of the United States. It has a light-brown color, a buttery consistency, and a mild, sweetish taste.

The method of manufacture is as follows: As soon as the curd of the regular cheese is removed from the whey the latter is strained and put into a kettle or large pan over the fire, and the albuminous material which rises to the surface is skimmed off. The whey is evaporated as rapidly as possible with constant and thorough stirring. When it has reached about one-fourth its original volume the albumin previously skimmed off is returned and stirred thoroughly to break up all possible lumps. When the whey has attained the consistency of thickened milk it is poured quickly into a wooden trough and stirred with a paddle until cool, to prevent the formation of sugar crystals. It can then be molded into the desired form. In this country it is usually made into cylindrical shapes and wrapped in tin foil. Ptimost is a local name for this cheese.

NAGELKAZEN.

This is the trade name of a species of cheese mentioned by John Ashton in an article on cooperative creameries in Holland. The cheese is made of new curd with cloves mixed in.

NESSEL.

This is a soft-cured, rennet cheese made from cows' milk, unskimmed. It is an English product and is round and very thin.

NEUFCHÂTEL.

This is a soft, rennet cheese made extensively in the Department of Seine Inférieure, France, from cows' milk either whole or skimmed. Bondon, Malakoff, Petit Carré, and Petit Suisse are essentially the same as Neufchâtel, but have slightly different shapes.

Neufchâtel cheese is made in identically the same manner as Cream cheese, with the exception that a little less rennet is used, perhaps 1 ounce of commercial liquid rennet to 1,000 pounds of milk. This product is made from whole milk or milk partially skimmed. The standard package, wrapped in tin foil, is round and weighs 2½ or 3 ounces, its dimensions being 1½ by 2½ inches. Factories in the United States make a variation of the Neufchâtel cheese, which is very probably as good as the French variety. Makers in this country attempted to vary this cheese by the use of condiments. Pimiento, or Pepper Cream, is a Neufchâtel cheese in which 1 pound of red peppers is used for every 10 pounds of cheese. The peppers are ground very fine and thoroughly mixed with the cheese; the whole is then molded into forms and kept in a cold place.

NEW MILK.

This cheese is made in Holland, the process of manufacture resembling that of Gouda cheese. It is made only in limited quantities at the beginning of the summer season, and is eaten fresh.

NIEHEIM.

This is a sour-milk cheese made in Westphalia and named from a city in that Province. The sour milk is heated to a temperature of 100° or 120° F. The curd is collected in a cloth and allowed to stand for 24 hours, when it is worked until in a fine condition. It is then made up into cakes, which are put into a cellar and turned frequently for from five to eight days, when it is broken

up, and salt and caraway seed, and sometimes beer or milk, are added. The cheese is covered lightly with straw and finally packed in casks with hops and allowed to ripen.

NOSTRALE.

This name is applied locally to two kinds of rennet cheese made from cows' milk in the mountainous regions of northwestern Italy. The hard cheese, designated Formaggio Duro, is made during the spring, while the herds are still in the valleys, and the soft cheese, Formaggio Tenero, during the summer, when they are pastured in the mountains. The cheese is said to be a very old variety and the methods of manufacture to have remained primitive. A cheese designated Raschera, made in the region of Mondovi, is probably the same as Nostrale.

OLIVE CREAM.

This cheese is made by mixing ground olives with cream cheese to suit the taste of the customer. Some manufacturers put it on the market already prepared.

OLIVET.

This is a soft, rennet cheese made from cows' milk. The manufacture of this variety originated south of Orleans, in the Department of Loiret, France. The industry is now carried on north of Orleans near Olivet, to which place the cheese doubtless owes its name. It has three forms, designated white or summer cheese, blue or the ordinary half-ripened form, and ripened. In general the process of manufacture resembles that of Camembert. The ordinary form is made from either whole milk or partly skimmed milk. About two hours after the addition of rennet the curd is placed in a receptacle having holes in the bottom and sides and allowed to drain for 24 hours, when it is put into forms about 6 inches in diameter. The cheese is turned and salted the next day, and about one day later is taken to the first curing room, where it is placed on shelves covered with straw. This room is kept at a temperature of about 65° F. and the cheese becomes red in a few days and later blue. The blue color is a sign of maturity, and its appearance requires from 10 to 15 days in summer and one month in winter. The cheese is then ready for marketing. When properly cared for it may remain in good condition for several months. The form designated ripened is made in the same way until the blue color appears, when the cheese is put into the curing cellar, where ripening is carried to a much greater extent. Ordinarily it requires from 15 to 30 days, but sometimes the cheese is covered with ashes, which are believed to hasten the ripening process. The form designated white or summer cheese is made from whole milk, to which cream is sometimes added. The curd is obtained in the ordinary manner and pressed into molds, in which it is sold as fresh cheese, summer cheese, white cheese, or cream cheese.

OLMÜTZER QUARGEL.

This is a hand cheese made extensively in the western part of Austria. It is 1½ inches in diameter and one-third of an inch thick and contains caraway seed. It is made with 5 per cent of salt and after drying is put into salt whey for a time. It is then packed in kegs and ripened for 8 or 10 weeks. In all other respects the manufacture is identical with that of Hand cheese.

OSSETIN.

This cheese is made in the Caucasus from sheep's or cows' milk, the best being made from the former. The fresh, warm milk is set with rennet in sufficient quantity to coagulate quickly. The curd is broken up with the hand

and is cooked until it has the proper degree of firmness, after which it is kneaded together and the whey removed. It is then put into round forms, sprinkled with salt, and allowed to remain for two days. The cheese then goes into brine, where it may be kept for a year, or even longer. A softer, milder cheese is produced by leaving it in the brine for two months.

Tuschinsk and Kasach are other names for Ossetin.

OSTIEPEK.

This is a sheep's-milk cheese made in the Carpathian Mountains. The process is said to be the same as that used by the Italians in making the better known Caciocavallo.

OVCJI SIR.

This is a sheep's-milk cheese made in the Slovenian Alps. Morning's milk is mixed with evening's milk in a kettle holding about 50 liters and warmed to from 86° to 95° F. over an open fire. A sufficient quantity of rennet made from a kid's stomach is added to coagulate it in about 30 minutes. The curd is broken up and heated to 122° F., drained for an hour in a rack, and placed on a wooden vessel or hoop. Salt is rubbed on the surface of the cheese each day for a week. The cheese is ripened for three months in a cellar, and when ready for sale weighs from 6 to 10 pounds.

PAGLIA.

This is a more or less successful imitation of Gorgonzola cheese, made in the Canton of Ticino, Switzerland. A cheese is 8 inches in diameter and 2 inches in thickness. The milk is set at a temperature of 100° F., the time allowed being about 15 minutes. The curd is broken up, stirred, and put into hoops. When sufficiently drained the cheese is taken to a cool cellar and placed on straw, where fermentation is usually very rapid and marked. The process is delayed to some extent by excessive salting, which is continued for about a month. The cheese is very soft in consistency and has a pleasant, aromatic flavor.

PAGO.

This is a rennet cheese made from sheep's milk in the island of Pago, in the Province of Dalmatia, Austria. It is put up in sizes weighing from one-half to 8 pounds.

PARENCIA.

This is a sheep's-milk cheese made in Hungary. The process is similar to that used in making Caciocavallo.

PARMESAN.

Outside of Italy this name is in common use for the cheese made and known in that country for centuries as Grana, the term "grana" or "granona" referring to its granular appearance when broken, which is necessary on account of the hardness of the cheese, cutting being practically impossible. There are two quite distinct kinds of this cheese—one made in Lombardy and the other in Emilia, the centers of production being separated by the River Po. Parma, situated in Emilia, has long been an important commercial center for both kinds, and to this fact the name Parmesan is due. The use of the term "Parmesan," however, is sometimes restricted to the cheese made in Lombardy, the term "Reggian" being used to designate that made in Emilia. Italian

writers refer usually to the Lombardy cheese as Cacio or Formaggio Grana Lodigiano, Lodi being an important center of trade, and to the Emilian cheese as Grana Parmigiano or Reggiano. The Lodi cheese is larger and made from a poorer quality of milk than the Reggian, which is colored and brings a much higher price. The following description of the process of manufacture applies to both kinds:

The milk, which has been skimmed to a greater or less extent, is heated in copper kettles to a temperature varying, according to the acidity of the milk, from 90° to 100° F. The kettle is then removed from the fire, rennet added, and the kettle covered and allowed to stand for 20 minutes to one hour, when the curd is cut very fine and cooked, with stirring, to 115° or 125° F. for from 15 to 45 minutes. The curd is removed from the kettle by means of a cloth, and after draining for a short time is put into hoops about 10 inches high and 18 inches or more in diameter, and lined with coarse cloth before filling. Pressure is then applied for 24 hours, the cheese being turned frequently and the cloths changed. The salting, which is begun in from one to three days after removing from the press, is continued for a considerable length of time, often 40 days. The cheeses are then transferred to a cool, well-ventilated room, where they may be stored for years, the surface being rubbed with oil from time to time. The exterior of the cheese is dark green or black, due to coloring matter rubbed on the surface. A greenish color in the interior has been attributed to the contamination with copper from the vessels in which the milk is allowed to stand before skimming.

The Lombardy cheese made from April to September is known locally as Sorte Maggenga and that from October to March as Sorte Vermenga. The Reggian cheese is made only in summer.

Parmesan cheese when well made may be broken and grated easily and may be kept for an indefinite number of years. It is grated and used largely for soups and with macaroni. A considerable quantity of this cheese is imported into this country and sells for a very high price.

PECORINO.

The Formaggi Pecorini are the sheep's-milk cheeses made in Italy and of which there are numerous more or less clearly defined kinds. The most common cheese of this sort is the one designated Cacio Pecorino Romano, or merely Romano. This varies considerably in size and shape. A cheese of ordinary size is about 10 inches in diameter and 6 inches in thickness and weighs from 2 to 25 pounds. The interior is slightly greenish in color, somewhat granular, and devoid of eyes or holes. In making Romano cheese the milk is heated to 100° F. and coagulated by rennet in 15 minutes. The curd is cut, cooked to 120° F., stirred, put into forms, and allowed to drain. Salting is done both by immersion in brine and by rubbing salt on the surface. As much as 7 or 8 per cent of salt is usually incorporated in the course of one month. This process is sometimes facilitated by punching several holes in the cheese. Ripening is usually done at a temperature of 60° or 70° F. and requires eight months or longer.

The Pecorino Dolce is artificially colored with annatto and subjected to considerable pressure in the process of manufacture.

Pecorino Tuscano is a smaller cheese than the Romano, measuring usually 6 inches in diameter and 2 or 4 inches in thickness and weighing from 2 to 5 pounds.

Among the sheep's-milk cheeses bearing local names are the following: Ancona, Cotrone, Iglesias, Leonessa, Puglia, and Viterbo. In the manufacture of

Viterbo cheese the milk is curdled by means of a wild artichoke, *Cynara scolymus.*

PECORINO SARDO.

This is a rennet, sheep's-milk cheese, made in Sardinia. A rennet made by soaking calves' stomachs a day in salt water is added to the freshly drawn milk, the temperature for adding the rennet being determined by the hand. The coagulated milk is allowed to stand until clear whey shows around the edges of the kettle, when the curd is broken up and put into molds under light pressure until the whey stops running. The cheese is salted in brine for a day and is then placed in the curing room.

PENTELEU.

This cheese is made in Roumania, from sheep's milk, after the general process used in making Caciocavallo.

PFISTER.

This cheese is classed in the Emmental group, though its method of manufacture differs materially. It is made from fresh skimmed milk of cows. It takes its name from Pfister Huber, in Cham, Switzerland, who evidently was the first to manufacture it.

The milk is set at 85° F. with sufficient rennet to coagulate it in 30 minutes. The curd is cut coarse and allowed to stand for 15 minutes, when the whey is dipped off. The curd is again stirred for five minutes, care being taken that the temperature does not fall below the setting point. The curd is again allowed to stand for five minutes, when it is taken from the kettle in a cloth and put in a hoop, where it is pressed for 24 hours, being turned occasionally and dry cloths substituted. The cheese is transferred from the press to the salt bath, where it remains for three days. It is then taken to a moist room having a temperature of 85° F., where it is placed on shelves and turned and occasionally salted. The cheese is ready for market at about 6 weeks of age. It is drum-shaped, like a characteristic Emmental, but not so large, weighing about 50 pounds.

PHILADELPHIA CREAM.

This is an ordinary cream cheese, put up by a firm in the State of New York. It is 3 by $2\frac{1}{2}$ by $1\frac{1}{4}$ inches in size and is wrapped in parchment paper and tin foil.

PIMIENTO.

Pimiento cheese is any kind of cheese to which pimiento or Spanish peppers have been added, the most common type being Neufchâtel or cream; they are sometimes added to Club cheese or Cottage cheese and occasionally to hard Cheddar cheese.

PINEAPPLE.

This cheese, which is said to have had its origin in Litchfield County, Conn., about 1845, is so named from the fruit whose shape the cheese is made to resemble. It is a hard, rennet cheese made from cows' milk, whole. The cheese is quite hard and rather highly colored. The early process of manufacture is the same as Cheddar, except that it is cooked much harder. The curd is pressed into the desired shape in various sizes up to 6 pounds in weight. After pressing, the cheese is dipped for a few minutes in water at 120° F. and is then put into a net for 24 hours, which gives it the diamond-shaped corrugations on the surface. It requires several months to ripen, during which time the surface is rubbed with oil, making it very smooth and hard.

PONT L'ÉVÊQUE.

This is a soft, rennet cheese made from cows' milk. Three grades are recognized, depending upon the quality of the milk used. A Pont l'Évêque cheese is about 4½ inches square and 1¼ inches thick.

This cheese was made in the thirteenth century in the valley of Auge, from which it derived its earlier name, Augelot, and by corruption Angelot. The principal seat of the industry at the present time is Pont l'Évêque and vicinity, in the Department of Calvados, France. The manufacture of this cheese is of considerable importance in the region named. The milk used may be either whole milk with or without the addition of cream, a mixture of whole and skimmed milk, or milk entirely skimmed.

Coloring matter and warm or hot water are usually added to the milk before setting with rennet, which is done at a temperature of about 95° F. After standing for from 15 to 30 minutes the curd is cut, removed to a draining board for a few minutes, and then put into square forms or hoops. The cheese is turned very frequently during the first half hour and five or six times more during the remainder of the first day. It is salted the second or third day and transferred to a well-ventilated room for several days. When sufficiently dried it is taken to the curing cellar. During drying and ripening the cheeses are turned every day and while in the cellar are washed frequently with salt water. Ripening requires usually from 3 to 6 weeks.

PORT DU SALUT.

This is a rennet cheese made from cows' milk. In many respects it is intermediate between the soft and hard varieties. The rind is firm and resistant but the interior is soft and homogeneous, though it does not become semiliquid like the interior of Brie cheese. This variety of cheese originated about 1865 in the Trappist Abbey, Port du Salut, about 6 miles from Laval, in the Department of Mayenne, France. While to some extent the process is kept a secret by the Trappists, very successful imitations are made outside the monasteries in that region.

The milk, either whole or partly skimmed and preferably slightly acid, is heated to 90° or 95° F. and sufficient rennet added in order to obtain the desired firmness of the curd in about 30 minutes. Coloring matter is usually added to the milk. The curd is cut very fine and in a manner similar to that followed in making Emmental cheese. This requires about 20 minutes, after which part of the whey may be removed. The curd is then stirred and may be heated or cooked to a moderate degree. The final temperature reached in cooking varies from 100° to 105° F., depending upon the acidity of the milk. The time required in stirring and heating is about 20 minutes. The curd is then allowed to settle and the whey removed. After being stirred vigorously for from 2 to 4 minutes, the curd is put into molds which are of two sizes, the smaller about 7 inches in diameter and the larger about 10 inches. A disk is placed on the cheese and pressure applied by means of presses for from 10 to 12 hours, the cheese being turned and the cloths frequently changed during that time. The next day the hoops are removed and the cheese salted. After drying for about 24 hours it is transferred to the ripening cellar, where it remains from 5 to 6 weeks. In this place a temperature of about 55° F. and a relative humidity of 85° or 90° F. is preferred. During ripening the cheeses are turned very frequently and washed with salt water, the frequency depending somewhat upon the rapidity with which molds develop. The cheese is often sold before the ripening process is entirely complete.

POTATO.

This cheese is made in Thuringia, in the central part of Germany. In the manufacture of potato cheese, curd is made from cows' milk, sour, or in some cases from renneted milk. Sometimes sheep's or goats' milk is used. The potatoes are boiled and grated or mashed. One part of the potatoes is thoroughly mixed or kneaded with two or three parts of the curd. In the better cheese three parts of potatoes are mixed with two of curd. During the mixing salt and sometimes caraway seed is added. The cheese is allowed to stand for from two to four days while a fermentation takes place. After this the curd is again thoroughly kneaded and placed in forms for a day. It is then dried and is sometimes covered with beer or cream, and is finally placed in tubs and allowed to ripen for 14 days.

A variety of this cheese is made in the United States. It is probable, however, that it is not allowed to ripen for quite so long a period as the potato cheese of Europe. In all other essentials it appears to be identically the same.

POTTED.

This cheese very probably originated in the United States. It is usually prepared from well-ripened Cheddar cheese by grinding it very fine and mixing with butter, condiments, spirits, etc. In the past it has been put up in small porcelain jars, but at the present time a portion of it is wrapped in waxed paper and either tin or lead foil, and often goes by the name of Club cheese.

PRATTIGAU.

This is made from cows' milk, skimmed, and is so named from the valley of Switzerland in which it is made. Its manufacture is the same as that of Limburg. Cheeses weigh from 20 to 25 pounds each.

PRESTOST.

Prestost is a product of Sweden, where it is often called Saaland Pfarr. It is a rennet cheese made from cows' milk, fresh, and resembles Gouda. It was known in the eighteenth century. The milk is set at 90° F. and is allowed to become very firm, when it is cut coarse with a wooden knife and poured into a sieve, which allows the whey to drain off. The curd is then put into a cloth and kneaded. Whisky is mixed with the curd, which is then packed in a basket, and after some salt is sprinkled on the surface it is put into a cellar. The cloth inclosing the cheese is changed daily for three days, after which the cheese is washed with whisky. A cheese is cylindrical in shape and weighs from 5 to 30 pounds.

PROVIDENCE.

This cheese is about 8 inches in diameter and 1½ inches thick, and very closely resembles Port du Salut. It is made in the monastery of Bricquebec in the Department of Manche, France.

PROVOLE.

This is one of the most esteemed of the several kinds of hard, rennet cheese made from cows' milk, including also that of buffaloes, in central and southern Italy. The cheese is round or oval and weighs from 4 to 6 pounds. Smaller sizes weighing about 2 pounds are known as Provoloni. In many respects, including the cooking of the curd with hot water and the smoking of the cheese, Provole and Provoloni resemble Caciocavallo. Considerable quantities of this cheese are imported into the United States.

PULTOST.

Pultost, also called Knaost, is made usually from sour milk, but it may be made with rennet. It is a Norwegian product and is made in private dairies in the mountains of that country. The milk is placed in a kettle and, if not sour enough to coagulate on warming, the acidity is increased by the addition of buttermilk. When sufficient acid has developed, the milk is warmed to 113° F. The curd is broken up with a scoop and stirred to keep it from matting together while it is being heated to 140° F. It is then dipped and ground up fine. Buttermilk is added and the whole is thoroughly kneaded and put into troughs, where it is covered with a cloth. It is allowed to stand for three days with occasional stirring.

QUACHEQ.

This is a sheep's-milk cheese made in Macedonia. Some fermented material is added to the milk to precipitate the casein. The cheese is pressed to remove the whey. It is eaten both fresh and ripened.

QUESO DE CINCHO.

This is a sour-milk cheese made in Venezuela and known also as Queso de Palma Metida. It is exported in the form of balls from 8 to 16 inches in diameter and wrapped in palm leaves.

QUESO DE HOJA.

This a Porto Rican cheese made from cows' milk, fresh. The curd is cut into blocks about 6 inches square and 2 inches thick. After part of the whey is drained off, which may require several hours, the pieces of curd are immersed in water or whey having a temperature of 150° F. This gives a tough layer to the block of curd, which is then removed to a table and pressed or stretched by the use of a broad wooden spoon or paddle. Salt is sprinkled on the surface, and the piece of curd is folded and wrapped in a cloth and squeezed to force out the moisture. The finished product is about 6 inches in diameter, 1 or 2 inches thick, and has slightly rounded top and bottom surfaces. When the cheese is cut it appears to be in layers like leaves one upon another; hence the name, signifying leaf cheese.

QUESO DE MANO.

This is a sour-milk cheese resembling a Hand cheese and is made in Venezuela. It is from 6 to 7 inches in diameter.

QUESO DE PRENSA.

This is a Porto Rican product and is a hard, rennet cheese made from cows' milk, unskimmed. The name signifies pressed cheese. The milk is allowed to stand six hours without cooling, and rennet is then added. The curd is broken by hand or with a stick, and after part of the whey is separated the curd is transferred to a table and is broken into small pieces. It is then put into wooden frames, and salt is added either as the curd goes into the frame or by sprinkling on top. Light pressure is applied either by hand or by means of a screw. After leaving the press, the cheese is placed on racks. It may be eaten fresh or allowed to stand for from 2 to 3 months. The cheese is 11 inches long, 5½ inches wide, 3 inches thick, and weighs about 5 pounds.

QUESO DE PUNA.

This is a Porto Rican product, resembling very much the Cottage or Dutch cheese of the United States. The milk is set with rennet, and the curd is thoroughly mashed or kneaded by hand, salt being added at the same time. The curd is put into a hoop 5 inches in diameter and 1¼ inches deep, where it remains without pressure for two or three days, or until it will keep its form. The cheese is eaten fresh.

RABACAL.

This is a round, rather firm cheese made from the milk of sheep or goats in the vicinity of Coimbra, Portugal. A cheese is 4 or 5 inches in diameter and 1 inch thick.

RADEN.

This is a hard, rennet cheese made from skim milk in Mecklenburg. The cheese is 16 inches in diameter and 4 inches thick, and weighs 32 pounds. The process of manufacture does not differ materially from that of Emmental.

RANGIPORT.

This cheese is in every way analogous to Port du Salut. It is about 6 inches in diameter and 2½ inches thick, weighs about 2½ pounds, and is made in the Department of Seine-et-Oise, France.

RAYON.

This is a special type of Emmental cheese, made largely in the Canton of Fribourg, Switzerland, for exportation to Italy, though some is now manufactured in Italy. It is made of partly skimmed milk, and the cooking is continued to a point that insures a very dry, hard cheese, which develops no eyes. After curing it is shipped largely to Turin, where it is placed on edge on shelves in dry, warm caves, and the fat leaks out, leaving the cheese exceedingly dry and hard, when it is used for grating. After the drying process the cheese is called Raper.

REBBIOLA.

Rebbiola, or Robiola, is a soft cheese, made principally in the Alpine districts of Italy. The process of manufacture is very simple. It is generally made from milk skimmed after 12 hours, but whole milk is sometimes used. The cheese is circular and weighs about 2 pounds. The ripening process is very rapid, requiring usually from 12 to 15 days. The milk is set at a temperature of 90° F., the time allowed being usually about one-half hour. The curd is cut fine and put into molds 8 inches in diameter and 6 inches high, the bottom being perforated. Five hours later the cheeses are removed from the molds and placed on a draining board covered with straw. After two or three days they are salted and then ripened.

REBLOCHON.

This is a soft, French cheese, weighing 1 or 2 pounds. It is made from fresh whole milk, which is curdled with rennet at a temperature of 80° F. or above, the time allowed being about 30 minutes. The curd is cut to the size of peas, cooked to about 95° F., and after the removal of the whey is put into molds about 6 inches in diameter and 2 inches in height. A weight of about 5 pounds is

placed upon each cheese, which is turned frequently and salted after about 12 hours. In a moist room having a temperature of about 60° F. the desired degree of ripening is obtained in four or five weeks. An imitation of this cheese, made in Savoy, France, is known as Brizecon.

REINDEER MILK.

In Norway and Sweden the milk of the reindeer is sometimes used for cheesemaking. Rennet is added at 100° F., and the curd is cut and dipped into a large frame, where it is pressed lightly. The mass of curd is then cut into pieces 5 by 4 by 2½ inches, which are salted on the surface and are allowed to ripen in a dry curing room.

RIESENGEBIRGE.

This is a soft, rennet cheese, made from goats' milk in the mountains on the northern border of Bohemia. The milk is set at about 90° F. The curd is broken up and the whey dipped off, after which the curd is put into forms, where it remains in a warm place for 24 hours. It is then covered with salt and after drying for three or four days is placed in the curing cellar. From each 100 pounds of milk 18 pounds of cheese is produced.

RINNEN.

This is a sour-milk cheese which was known in the eighteenth century. It is made in Pomerania from milk sufficiently acid to cause a precipitation of the curd when it is warmed to about 90° F. The cheese derives its name from the wooden trough in which it is laid to drain. The curd is broken up, heated to expel the whey, and is kneaded by hand. Caraway seed is added, the curd is molded into forms and pressed, and salt is rubbed on the outside. The cheese is dried and put into a box to ripen.

RIOLA.

This cheese usually is made from sheep's or goats' milk. In manufacture it resembles Mont d'Or cheese, but is ripened longer, from two to three months being required. It is soft in texture and has a strong flavor.

ROCAMADOUR.

This is a sheep's-milk cheese made in the southern part of France. Rennet is added at about 77° F. and when it is sufficiently coagulated it is dipped into terra-cotta forms, where it is allowed to drain. Salt is sifted into the forms, where the cheese remains for a day. A cheese of this kind weighs about one-eighth of a pound.

ROLL.

This is a hard, rennet cheese, made in England from cows' milk, unskimmed. It is cylindrical in shape, 8 inches high by 9 inches in diameter and weighs 20 pounds.

ROLLOT.

This is a soft, rennet cheese, 2½ inches in diameter and 2 inches thick, made in the Departments of Somme and Oise, France.

ROMADOUR.

Romadour, Remoudou, or Romatur cheese is a southern Bavarian product similar to Limburg. It is 4½ by 2 by 2 inches in size and weighs 1 pound. It

is said to be a little finer variety of cheese than Limburg and to sell for a slightly higher price.

ROQUEFORT.

This is a soft, rennet cheese made from the milk of sheep. There are, however, numerous imitations, such as Gex and Septmoncel, made from cows' milk, which resemble Roquefort. One of the most striking characteristics of this cheese is the mottled or marbled appearance of the interior, due to the development of a penicillium, which is the principal ripening agent. The manufacture of Roquefort cheese has been carried on in the southeastern part of France for at least two centuries. The industry is particularly important in the Department of Aveyron, in the village of Roquefort, from which the cheese derives its name. It is also made in Corsica. Imitations of Roquefort are made in various countries.

The evening's milk is heated to 140° or 150° F., cooled, and kept overnight. After being skimmed it is mixed with the fresh morning's milk. The mixture is then set with rennet at a temperature of from 78° to 82° F. In from one to two hours after the addition of rennet the curd is cut until the particles are about the size of walnuts. The whey which rises to the surface is dipped off, and the curd is put into hoops which are about 8½ inches in diameter and 3½ inches in height. The hoops usually are filled in three layers, a layer of moldy bread crumbs being interspersed between the first and second and second and third layers. The bread used for this purpose is prepared from wheat and barley flour, with the addition of whey and a little vinegar. It is thoroughly baked and kept in a moist place from four to six weeks, during which time it becomes permeated with a growth of the mold referred to. The crust is removed, and the interior is crumbled very fine and sifted. The cheese is not subjected to pressure. It is turned usually one hour after putting into hoops and is not wrapped in cloths.

Formerly the manufacture of the cheese up to this stage was carried on by the shepherds themselves, but in recent years centralized factories have been established, and much of the milk is collected and there made into cheese. The cheese is then taken to the caves. These are for the most part natural caverns which exist in large numbers in the region of Roquefort. The temperature in these caves is 40° to 45° F., and the air circulates very freely through them. Recently artificial caves have been constructed and used. When the cheeses reach the caves they are salted, which serves to check the growth of the mold on the surface. One or two days later they are rubbed vigorously with a cloth and are afterward subjected to thorough scraping with knives, a process formerly done by hand, but now much more satisfactorily and economically by machinery. The salting, scraping, or brushing seems to check the development of mold on the surface. In order to favor the growth of mold in the interior, the cheese is pierced by machinery with from 20 to 60 small needles, which process permits the free access of air. The cheese may be sold after from 30 to 40 days or may remain in the caves as long as five months, depending upon the degree of ripening desired. During the process of ripening by scraping and evaporation the cheese loses from 16 to 20 per cent of the original weight. When ripened, it weighs 4½ or 5 pounds.

SAANEN.

This is a type of Emmental cheese made in Switzerland from cows' milk. It is sometimes known as Hartkäse, Reibkäse, and Walliskäse. First mentioned in the sixteenth century, it is still manufactured extensively at the present

time and exported to a limited extent. It sells for a higher price than the regular Emmental. The process of manufacture is identical with that of Emmental, except that it is cooked much dryer, takes much longer to cure, and keeps longer. The cheese weighs from 10 to 20 pounds, and the eyes are few and small.

The ripening period is never less than three years and many require as long as nine years, the average being six years. The cheeses are kept to great ages, it being the custom to make a cheese at the birth of a child and eat it at the burial feast or even at the burial feast of a son of the child for whom it is made. One cheese is mentioned as being 200 years old and is considered a great honor to the household. Many cheeses are kept until they are 30 years old.

SAGE.

This cheese is made by the ordinary Cheddar process and may be of any of the various shapes and sizes in which that cheese is pressed. When cut, it has a green, mottled appearance.

Formerly sage cheese was made by mixing green sage leaves with the curd before it was pressed. At the present time the flavor of sage is obtained by sage extract. To produce the green mottles, succulent green corn is cut fine and the juice is pressed out. A small portion of the milk is mixed with this juice and is set with rennet in a small vat, while the bulk of the milk is set in the ordinary manner. After the curd is cut and is firm enough to be handled, the green curd from the small vat is mixed with the uncolored curd, and the process is continued as in the Cheddar process. With many consumers this is a very popular variety of cheese.

SAINT BENOÎT.

This is a soft, rennet cheese resembling Olivet, and is made in the Department of Loiret, France. Charcoal is added to the salt which is applied to the exterior of the cheese. Ripening requires from 12 to 15 days in summer, and 18 to 20 in winter. A cheese of this kind is about 6 inches in diameter.

SAINT CLAUDE.

This is a small, square, goats'-milk cheese made in the region of Saint Claude, France. The milk is curdled with rennet and the curd placed in molds for six or eight hours. It is then salted and allowed to ripen, or may, however, be eaten when fresh. A cheese weighs from one-quarter to one-half pound.

SAINT MARCELLIN.

This is a goats'-milk cheese made in the Department of Isère, France. Sheep's milk or even cows' milk may be mixed with the goats' milk. A cheese is about 3 inches in diameter, three-fourths of an inch thick, and weighs about one-fourth pound.

SAINT REMY.

This is a soft, rennet cheese differing but little from Pont l'Évêque. It is made in the Department of Haute-Saône, France.

SALAMANA.

This is a soft, sheep's-milk cheese made in southern Europe. It is filled into bladders and allowed to ripen, when it has a very pronounced flavor. It is eaten by spreading on bread or is mixed with corn meal and cooked.

SALOIO.

This is a kind of hand cheese made from cows' milk, skimmed, on farms in the region of Lisbon, Portugal. It has the form of a short cylinder, measures 1½ or 2 inches in diameter, and weighs about 4 ounces. A similar cheese of about the same character is made in Thomar, about 50 miles north of Lisbon.

SANDWICH NUT.

This cheese is made by mixing chopped nuts with cream or uncured Neufchâtel cheese.

SAPSAGO.

This cheese is made from sour, skimmed milk of cows, principally in Glarus, Switzerland. It is known also as Schabzieger, Glarnerkäse, Grünerkäse, and Kräuterkäse. It is claimed to have been made in the thirteenth century; the authentic history at least dates back to the fifteenth century. Sapsago is a small, hard, green cheese flavored with the leaves of a species of clover; it is shaped like a truncated cone, 4 inches high, 3 inches in diameter at the base, and 2 inches at the top. This cheese is imported to some extent into the United States under the name of Sap Sago.

The skimmed milk from which this cheese is made is not allowed to become sour enough to coagulate on heating, as it would make too hard a curd. The milk, when it has reached the right acidity, is heated to the boiling temperature while being stirred. Cold buttermilk is then added, as is also some whey having a high percentage of acidity. The material coagulating on the surface is skimmed off. The milk is then stirred, while sufficient acid whey is added to precipitate the casein. When too little whey is used the curd is too soft, and when too much is used it is too hard. The curd is dipped with a skimmer and spread out to cool and then put into boxes and allowed to drain and ferment. The box is kept at a temperature of about 60° F., and pressure is applied by weighting with stones. Ripening is allowed to continue from three to six weeks. If the temperature of the room is too high, or there is not sufficient pressure, too rapid and strong fermentation results. This curd is used for making the finished product, but the cheese is seldom finished where the curd is made. The curd is ground in a mill, and every 100 pounds of cheese contains 5 pounds of salt and 25 pounds of dried *Melilotus cærulea,* an aromatic clover which is grown in the Canton of Schweiz for the purpose. The ground material is worked up into a dough and is forced into molds lined with linen cloth, and the name of the manufacturer is stamped on the large end. The mold is then emptied and refilled. The cheeses are dumped promiscuously into a large cask holding about 200 pounds. A comparatively small quantity is shipped into this country. It sells at a low price and is usually grated.

SASSENAGE.

This is a hard, rennet cheese, about 12 inches in diameter and 3 inches in thickness, made from cows' milk to which small quantities of goats' and sheep's milk are usually added. The cheese is almost identical with that of Gex and Septmoncel. It derives its name from the village of Sassenage, near Grenoble, in the Department of Isère, France. The milk used is usually a mixture of skimmed milk and whole milk. It is set with rennet, and the curd is cut and put into molds in the same manner as with the other varieties mentioned. The same is also true of the ripening process, which requires about two months.

SCANNO.

This is a sheeps'-milk cheese, made in the Abruzzi, Italy. The milk is set with rennet and the process carelessly conducted until the curd is dipped from the whey. After dipping, the curd is washed in salt water and then in hot water, after which it is collected in a linen cloth and dipped in a one-fourth of 1 per cent solution of oxid of iron in sulphuric acid, with a portion of the rust or oxid undissolved. The curd remains in this bath for 24 hours, with frequent turning. It is then put into a clean, dry room with beechwood walls and is occasionally dipped in a weak solution of iron rust and acid. The outside of the curd cheese is black, with a deep-yellow interior. The cheese has a buttery consistency, a burnt taste, and is usually eaten with fruits.

SCARMORZE.

This is a small, rennet cheese made in southern Italy from the milk of buffaloes

SCHAMSER.

This cheese, which is also known as Rheinwald, is a rennet cheese made from cows' milk, skimmed, in the Canton Graubünden, Switzerland. The cheeses weigh from 40 to 45 pounds each and are 18 inches in diameter and 5 inches thick.

SCHLOSS.

Schlosskäse, or Castle cheese, is a Limburg cheese made in the northern part of Austria. It is a soft-cured, rennet cheese 4 by 2 by 2 inches in size. When ready for market it is wrapped in tin foil.

SCHOTTENGSIED.

This is a whey cheese made for home use by the peasants of the Alps.

SCHWARZENBERG.

This cheese is made in southern Bohemia and western Hungary. It is a rennet cheese made from partly skimmed milk of cows. One part of skimmed milk is added to two parts of fresh milk. In about one hour after the addition of rennet the curd is broken up and thoroughly stirred. It is then dipped into wooden forms and light pressure applied for half a day. For four or five days following, the cheese is rubbed with salt and is then taken to the cellar, where it is washed daily with salt water until ripe, which requires two or three months.

SÉNECTERRE.

This is a soft, rennet cheese originating at Saint Nectaire, in the Department of Puy-de-Dôme, France. It is made of whole milk, is cylindrical in shape, and weighs about 1½ pounds.

SEPTMONCEL.

This is a hard, rennet cheese made from cows' milk, to which a small proportion of goats' milk is sometimes added. It resembles the Gex and Sassenage varieties very closely, and its process of manufacture is almost identical with that of Roquefort. It is also known as Jura blue cheese. It derives its name from the village of Septmoncel, near Saint Claude, in the Department of Jura,

where for the most part the cheese is made. It is made almost exclusively on isolated farms rather than in cooperative dairies, and the methods used are somewhat rudimentary.

The milk, which is usually partly skimmed, is set with rennet at a temperature of about 85° F. The curd is cut and stirred after about one and a half hours. After it has settled the whey is poured off. The stirring and draining are repeated several times until the curd is sufficiently firm to put into hoops. Moderate pressure is applied for a few hours. The cheese is salted at the end of 24 hours, and thereafter daily for several days. It is then transferred to the first curing room, which is kept cool and moist. After three or four weeks it has become covered with blue mold, when it is transferred to cellars or natural caves, where the ripening is completed in from three to four weeks longer.

SERRA DA ESTRELLA.

This is the most highly prized of the several kinds of cheeses made in Portugal. The name refers to the mountainous region in which the cheese is produced. For the most part it is made from the milk of sheep, but goats' milk is often added, or even used alone, and occasionally cows' milk is used.

The method of making this cheese is comparatively simple. The milk is warmed in a kettle with little regard to the temperature obtained, and in most cases is coagulated by means of an extract of the flowers of a kind of thistle. The time required for curdling varies from two to six hours, depending upon the quantity of the extract used. The curd is broken up with a ladle or by hand, squeezed to remove most of the whey, and put into circular forms. After draining until sufficiently firm, the cheeses are removed from the hoops and allowed to ripen for several weeks, during which time they are frequently washed with whey and salted on the surface. The cheeses vary much in size, the larger measuring about 10 inches in diameter and 2 inches thick, and weighing about 5 pounds. The cheese is rather soft and has a pleasant, acid taste.

A similar cheese, made in another part of Portugal, is known as Castello Branco.

SERVIAN.

In making Servian cheese the milk is warmed in a kettle over a fire or in a tub by immersing heated stones. After the rennet is added the milk is allowed to stand one hour, when the curd is lifted in a cloth and the whey allowed to drain. It is then placed in a wooden vessel, salted, and covered successively with whey for about eight days and fresh milk for about six days.

SILESIAN.

A cheese known locally as Schlesischer Weichquarg is made from cows' milk, skimmed, the process of manufacture resembling that of Hand cheese. The milk is allowed to coagulate from souring, and the curd is broken up and cooked at 100° F. for a short period. The curd is then put into a cloth sack and light pressure applied for 24 hours, after which it is kneaded by hand, and salt and milk or cream are added. Flavoring substances, such as onions or caraway seed, are also sometimes added. The cheese is eaten fresh.

Another cheese, known as Schlesischer Sauermilchkäse, is also made in much the same way as Hand cheese. The cheeses are kept on shelves covered with straw and are dried by the stove in winter and in a latticework house in summer. Drying is continued until the cheese becomes very hard. It is ripened in a cellar, the process requiring from three to eight weeks, during which time it is washed with warm water every few days.

SIRAZ.

This is a Servian cheese made as a rule from whole milk. The milk is set at 104° F., and the curd is lifted from the whey with a cloth and pressed into cakes from 4 to 6 inches in diameter and 1 inch thick. The cakes are placed in the sun to dry until the fat commences to run, when they are rubbed several times with salt until a good crust is formed, after which they are packed in a wooden vessel and allowed to ripen. The cut surface shows a smooth appearance without holes. It is between a hard and a soft cheese.

SIR IZ MJESINE.

This cheese is made in the Province of Dalmatia, Austria, from sheep's milk, skimmed. The milk is warmed in a bottle over the fire, and sufficient rennet, made from the dried stomachs of calves or swine, is used to coagulate it very quickly. The curd is broken up with a wooden spoon, is placed over the fire and stirred by hand. When sufficiently "firmed," it is placed in forms 8 inches square and pressed into cakes 2 inches thick. It is dried for a day and cut into cubes, salted, and packed in green hides, either goat or sheep. This cheese is sometimes left in the larger cakes and eaten when fresh.

SIR MASTNY.

This is a rennet cheese and is made in Montenegro from sheep's milk, freshly drawn. The curd is cut coarse and then heated to from 95° to 130° F.

SIR POSNY.

This cheese is sometimes called Tord, sometimes Mrsav. It is made in Montenegro from the skimmed milk of sheep. It is set with rennet, cut coarse, and heated to 99° F. It is a white, hard cheese and has many small holes.

SLIPCOTE.

This cheese is made in Rutlandshire, England. It is a soft, unripened rennet cheese, made from cows' milk. The curd is dipped into small forms, and no pressure is applied. After the cheese is removed from the form the surface dries and cracks and is easily slipped off; hence the name. It is an old variety, having been well known in the middle of the eighteenth century

SPALEN.

This is a type of Emmental cheese and is sometimes known as Stringer. Its origin is unknown. It is made largely in the Canton of Unterwalden, Switzerland, from cows' milk, sweet or partly skimmed. The name is derived from the vessel in which the cheeses are transported and in which five or six of them are packed. This is a small cheese for an Emmental type, each cheese weighing from 35 to 40 pounds.

No thermometer is used in the manufacture, the temperature being judged by the feeling, and a very uneven product is the result. The process of making seems to vary much, the press consisting of a board with stones for weights, and the temperature of the cellar being poorly regulated.

SPITZ.

This is a small, rennet cheese made from cows' milk. The cheese is cylindrical in shape, being 4 inches high and 1½ inches in diameter.

STEPPES.

This name is applied to a Russian cheese made from whole milk. The milk after the addition of coloring matter is heated to about 90° F. and treated with sufficient rennet to coagulate it in 40 or 45 minutes. The curd is cut into large cubes, the whey removed slowly, and the curd still further broken up until the particles are uniformly about the size of peas. The curd is then heated gradually to 100° or 104° F., the mass meanwhile being gently agitated. After heating ceases, the stirring is kept up until the curd becomes dry, when it is placed in molds 10 by 5½ by 7 inches. After the cheeses are removed from the molds they are turned frequently and five hours later are salted and transferred to the curing cellar, where a temperature of about 55° F. is maintained. During the process of ripening the cheeses are worked occasionally with salt water and frequently turned.

STILTON.

This is a hard, rennet cheese, the best of which is made from cows' milk to which a portion of cream has been added. It was first made near the village of Stilton, Huntingdonshire, England, about the middle of the eighteenth century. It is now made principally in Leicestershire and western Rutlandshire, though its manufacture has extended to other parts of England. Its manufacture has been tried, though without success, in the United States. The cheese is about 7 inches in diameter and 9 inches high and weighs 12 or 15 pounds. It has a very characteristic wrinkled or ridged skin or rind, which is probably caused by the drying of molds and bacteria on the surface. When cut it shows blue or green portions of mold which give its characteristic piquant flavor. The cheese belongs to the same group as the Roquefort of France and the Gorgonzola of Italy.

The morning's milk is put into a thin vat, the cream from the night's milk is added, and the whole is brought to a temperature of 80° F., when the rennet is added. It is claimed by some cheesemakers that the curd should be softer when broken up or cut than the curd for Cheddar cheese, while by others it is believed that it should become very firm before it is disturbed, allowing one or two hours for setting. When sufficiently firm, the curd is dipped into cloths which are placed in tin strainers. After draining for one hour, the cloths containing the curd are packed closely together in a large tub and allowed to remain for 12 hours, when they are again tightened and packed for 18 hours. The curd is ground up coarse, and salt is added, 1 pound to 60 pounds of curd. It is then put into tin hoops 8 inches in diameter and 10 inches deep. The cheeses remain in the hoops for six days, when they are bandaged for 12 days, or until they become firm, and are then placed in the curing room at 65° F. Ripened Stilton cheese of late is often ground up and put into jars holding from 1 to 2½ pounds.

STRACCHINO.

This name is applied to several forms of soft cheeses made in Italy, the best known of which is Stracchino di Gorgonzola, described under the name of Gorgonzola. A square form 6 or 8 inches on a side and 1½ inches thick is known as Stracchino di Milano, Fresco, Quadro, or Quartirola. This cheese is prepared similarly to Gorgonzola but is allowed to ripen for only about two months. Very little is exported. Stracchino Crescenza is a very soft and highly colored cheese, usually eaten fresh. The form is similar to that of the Quartirola. It is usually marketed in about eight days and can not be kept long.

STYRIA.

This is a cylindrical-shaped cheese made from cows' milk, unskimmed, in Styria, Austria.

SWEET CURD.

This is a name applied in the United States to a hard, rennet cheese made from cows' milk. The name is used to distinguish it from the ordinary Cheddar or granular process, as in making Sweet-Curd cheese the milk is set sweet, and the cutting and cooking are done rapidly without regard to the development of acid. In making this cheese the curd is cooked very firm and is salted and put to press immediately. In all other respects the process is the same as for Cheddar, and the cheese when ripened resembles that cheese very closely.

SWISS.

Swiss or Schweitzer cheese belongs to the Emmental group of cheeses and is made usually from cows' milk, half skimmed. Its manufacture is very old. It is supposed to have originated in the Alps, but is now made in most of the surrounding countries. It is made mostly in the winter season, when the price of butter is high, and only for local consumption. Its manufacture differs from real Emmental in that it is made from half-skimmed milk. The morning's milk is first heated, and the skimmed milk of the previous evening is added. The curd is cut coarser and is not cooked so firm as Emmental, which gives a softer and more quickly ripened cheese.

The cheese made in the United States which goes by the name of Swiss or Domestic Swiss is in reality an imitation of the Emmental cheese, as it is made from whole milk.

TAFI.

This cheese is manufactured in the Province of Tucuman, in the Argentine Republic.

TAMIÉ.

This cheese is made by the Trappists in Savoy, France. The whole milk is heated to about 80° F. and coagulated with rennet in about 30 minutes. The curd is cut fine, cooked to about 100° F., stirred, and put into molds 7 inches in diameter and 4 inches in height. The cheese is pressed for from six to eight hours, the cloths being changed frequently. After being salted the cheese is ripened for five or six weeks. The method of manufacture is, to a large extent, a trade secret. The Tome de Beaumont is a more or less successful imitation.

TELEME.

This cheese, sometimes known as Branza de Braila, is made in Roumania from sheep's milk. The milk is set at 86° F., and after the curd is broken up the mass is put into a linen sack and cut into forms 2 inches by 2 inches by 1 inch, and the form, with the cheese, is placed in brine. This cheese is marketed when 10 days old.

TEXEL.

This is a sheep's-milk cheese made in Holland and was known in the seventeenth century. A cheese weighs 3 or 4 pounds and is colored green.

THENAY.

This is a soft, rennet cheese resembling Camembert and Vendôme and is made in the region of Thenay, in the Department of Loir-et-Cher, France. It is of

comparatively recent origin, and its consumption is limited practically to the region in which it is produced.

The evening's milk without being skimmed is mixed with the fresh milk of the next morning. The milk is set with rennet at a temperature of about 85° F. and allowed to stand for four or five hours. The curd is then broken up and put into hoops about 5 inches in diameter and 4 inches in height. After draining for about a day it is turned and salted. The cheese is then kept for about 20 days in a well-ventilated room, during which time it becomes covered with molds. It is then stored in the curing cellar for about 15 days.

TIBET.

The so-called Tibet cheese is a sheep's-milk cheese made in Tibet. The small cheeses, in cubes of about 2 inches, are strung on strings, 50 to 100 on each. This cheese is hard and is used for grating.

TIGNARD.

This is a hard, rennet cheese, resembling Gex and Sassenage, made from sheep's or goats' milk in the valley of the Tigne, in Savoy, France.

TILSIT.

This is a hard, rennet cheese made mainly in East Prussia from cows' milk, unskimmed. It is sometimes called Ragnit. The milk is set at 92° F., with sufficient rennet to coagulate in from 15 to 40 minutes. The curd is rather coarsely cut or broken and is cooked at a temperature of from 104° to 110° F., being stirred meanwhile with a harp. The curd is cooked about 40 minutes, or until it is quite firm and can not be squeezed through the fingers. It is then dipped into cylindrical forms, where it remains 24 hours. The cheese is then covered thickly with salt for from one to two days, when it is put into a salt bath from three to five days and then transferred to the cellar, where it is rubbed and washed frequently with salt water, and allowed to ripen for from four to six months. The cheese is from 6 to 12 inches in diameter, 3 to 4½ inches in height, and weighs from 6 to 28 pounds. It resembles in general characteristics the Brick cheese of the United States.

TOPPEN.

This is a sour-milk cheese made in Germany from skim milk and eaten while fresh. It is put up in small packages weighing about 1 ounce.

TOUAREG.

This is a rennet cheese made from skimmed milk by the Berber tribes, from the Barbary States to Lake Tchad, in Africa.

The coagulated milk or soft curd is dipped, in very thin layers, on to mats, where it stays until it will retain its shape. It is then placed in the sun for ten days or before a fire for six days, being turned a number of times. It is very hard and dry and is not salted. To curdle the milk some of the natives ues the leaves of a tree called Korourou.

TRAPPIST.

This cheese originated with the Trappists in 1885 in the monastery of Mariastern, near Banjaluka, in Bosnia. The fresh milk is heated to about 85° F., and rennet is added. After from one to two and one-half hours the curd, without

being cut or stirred, is put into hoops and pressed, after which it is salted and ripened. The growth of mold is entirely prevented by frequent washing, and thus the cheese ripens uniformly throughout. The ripening period of the smaller cheeses is from five to six weeks in summer, but the cheese is usually shipped at the end of four or five weeks. It is pale yellow in color and has a remarkably mild taste. Although it is to be classed among the soft varieties, the water content is often below 45 per cent. The ripening is also more characteristic of the hard cheeses. The smallest size of the cheese made in the monastery referred to has a diameter of 6 inches, a height of 2 inches, and weighs 2 or 3 pounds. A larger size measures 9 inches in diameter, 2½ inches in height, and weighs about 10 pounds. There is also a still larger size. The cheese is exported to a large extent to Austria and Hungary, the most important centers of the trade in these regions being Gratz and Budapest. It is, however, found in all the large cities of Austria, and the demand appears to be constantly increasing. This cheese is very probably the same as Port du Salut.

A cheese which is probably identical with the Trappist, or Port du Salut, is made in the Trappist monastery at Oka, Canada, and goes by the name of Oka cheese.

TRAVNIK.

This is a soft, rennet cheese made usually from sheep's milk, whole, to which a small quantity of goats' milk is added. Skimmed milk, however, is sometimes used. It is also known as Arnauten and Vlasic. This cheese originated in Albania, in the northwestern part of Turkey, in Europe, and has been made for at least a century. In the country of origin it was known at first by the name Arnautski Sir or Arnauten cheese. At the present time it is made in Bosnia and Herzegovina, but principally in the Vlasic Plain. The center of trade in this cheese in Travnik in Bosnia.

The fresh, warm milk is treated with sufficient rennet to coagulate it in one and one-fourth to two hours and is then allowed to stand for a short time until the coagulum contracts and the whey appears on the surface. The curd is then put into woolen sacks and drained for seven or eight hours, when it is pressed into flattened balls by hand. These balls are dried for a short time in the open air and are then packed into wooden receptacles varying in diameter from 14 to 28 inches, having a height of about 24 inches, and holding from 50 to 130 pounds of cheese. Each layer of cheese is salted and pressed, so that no air spaces are left. When the receptacle is filled the whey usually shows at the surface, any excess being removed. Moderate pressure is applied to the cover placed upon the cheese. When fresh, the cheese made from sheep's milk, whole, has a soft consistency, a nearly white color, and a pleasant, mild taste. The cheese, however, is usually allowed to ripen from two weeks to several months. No holes should develop in it.

TROUVILLE.

This is a soft, rennet cheese made in the same locality as Pont l'Évêque and is of the same nature though superior in quality. Only fresh, whole milk is used. The temperature of setting with rennet is from 85° to 95° F. The growth of molds during the process of ripening is prevented by frequent washing with salt water.

TROYES.

Two kinds of cheese are referred to by this name—one a washed cheese with a yellow rind, known as Ervy, and the other a cheese very closely resembling Camembert and known as Barberey. The industry is rather restricted.

TSCHIL.

This cheese is also known as Leaf, Telpanir, and Zwirn. It is made in Armenia from either cows' or sheep's milk, skimmed. The milk, evidently soured, is hung over a fire and heated to 122° F. With the hand the curd is kneaded in the bottom of a kettle until it becomes tough and is then pressed into cakes. These cakes are salted in a wooden trough and ripened for from five to eight days. When a sufficient number is on hand the cakes are broken up and packed in skins.

TUNA.

Tuna cheese is a Mexican product which has been of local importance from an early date. It is really a confection rather than a cheese, being made from the fruit of the *Tuna cardona*, or sometimes the *Tuna pachona*. The product is made by boiling and straining the Tuna pulp until a cheeselike consistency is reached, sometimes with the addition of nuts or flavors. It is of a chocolate color, pleasant to the taste, and wholesome. It is said to keep in good condition for a very long time.

TWDR SIR.

This cheese, a Serbian product, is made from sheep's milk, skimmed, and set with rennet at about 104° F. The curd is cut and is lifted from the whey with a cloth, salted lightly, and pressed in forms 10 or 12 inches in diameter and 2 inches high. This cheese has small holes, a sharp taste, and probably is similar to Brick or Limburger.

TWOROG.

This is a sour-milk cheese made in Russia. The soured milk is kept in a warm place for 24 hours, when the whey is removed and the curd put into wooden forms and subjected to pressure. This cheese is made on a large scale by farmers and is often used in making a bread called "Notruschki."

URI.

This is a hard, rennet, cows'-milk cheese made in the Canton of Uri, Switzerland. It has a diameter of from 8 to 12 inches, is 8 inches high, and weighs from 20 to 40 pounds.

VACHERIN.

This name applies to two quite different kinds of cheese. The form designated Vacherin à la Main is made in Switzerland and in Savoy, France. Cows' milk, whole, is set with rennet at a temperature of about 85° F., and the curd is cut very fine and put into hoops 12 inches in diameter and 5 or 6 inches high. It is salted and ripened. The rind is firm and hard, but the interior is almost liquid in consistency. The cheese is either spread on bread or eaten with a spoon, and weighs from 5 to 10 pounds. A cheese of this kind made in the same region is known locally as Tome de Montagne.

The form designated Vacherin Fondu is made in much the same manner as Emmental cheese. The ripened cheese is then melted, and spices are added.

VENDÔME.

This is a soft, rennet cheese resembling Camembert and Thenay, and is made in the region of Vendôme in the Department of Loir-et-Cher, France.

The warm, morning's milk is usually mixed with that of the previous evening, which produces ordinarily a setting temperature of 75° or 85° F. The period

of setting is four or five hours in summer and five or six hours in winter. The curd is then broken up and put into hoops about 5 inches in diameter and 4 inches in height. After draining for 24 hours, the cheese is turned and salted, which process is twice repeated every 12 hours. When sufficiently dried, it is placed in the curing cellar, where it is sometimes buried in ashes. This cheese is placed by some on a par with Camembert. The principal market is Paris.

VILLIERS.

This is a square, soft, rennet cheese weighing about 1 pound, made in the Department of Haute-Marne, France.

VOID.

This is a soft, rennet cheese resembling Pont l'Évêque and Limburg. It is made in the Department of Meuse, France. The milk is set with rennet at a high temperature, the whey is removed as rapidly as possible, and the cheeses during ripening are washed frequently with salt water.

VORARLBERG SOUR-MILK.

This, as the name indicates, is made from sour milk of cows. It is semicircular in shape and varies in size. It is essentially a hard cheese.

The sweet milk is put into a kettle and raised to 77° F., sour-thickened milk is added, and the mixture is stirred and heated to 95° F., at which temperature it coagulates. While this is being stirred with a curd scoop the temperature is raised to 105° F. The curd is then dipped into forms, where it is turned a few times during 24 hours. Salt is rubbed on the surface, and the cheese is placed in a room having a temperature of 67° F. The cheese is then placed in a cask and held for three days, and salt is sprinkled over the surface daily. The ripening is completed in a cellar. When ripe the cheese is greasy and has a very strong odor and flavor.

WEISSLAK.

This is a soft-cured, rennet cheese made from cows' milk in the Bavarian Algau, Germany. The cheese weighs about 2½ pounds and is rectangular in shape, 4½ by 4 by 3½ inches.

WENSLEYDALE.

This is a rennet cheese made from whole milk of cows and derives its name from the valley in Yorkshire, England, in which it originated. It is cylindrical in shape and weighs from 5 to 15 pounds.

In the old method of manufacture the evening's milk is heated to 100° F., and the fresh, morning's milk is added. It is set with sufficient rennet to coagulate it in 35 minutes. The breaking or cutting process requires 35 minutes, after which the curd is allowed to stand for 45 minutes at 90° F. The whey is then removed, and the curd is put into vats lined with cloth, and light pressure is applied for 30 minutes. The curd is broken up and allowed to drain for one hour. It is then milled and is pressed for 24 hours, when it is wrapped in cloth and finally put into brine for three days.

In the new method of manufacture the evening's milk is mixed with the morning's milk in a copper kettle, heated to 95° F., and rennet enough is added to coagulate it in 45 minutes. The curd is then broken up by hand or with a breaker. The whey is removed and the curd dipped into tin hoops, where it

drains for three hours. It is then turned and drained for another three hours. After pressing for 24 hours, the cheese is salted by immersion in brine for three days.

WEST FRIESIAN.

This is a rennet cheese made from cows' milk, skimmed. The milk is set in a copper kettle, one hour being allowed for coagulation. The curd is broken up and placed in a wooden tub, where it is kneaded. The curd is allowed to stand for several hours and then salted. It is pressed for three hours, washed in hot water, wrapped in a fine cloth, and again pressed for 12 hours. The cheese is eaten when one week old.

WESTPHALIA SOUR-MILK.

This is a hand cheese made in Westphalia. Sour milk is stirred and heated to 100° F., placed in a sack, and the whey pressed out. The curd is then kneaded by hand and salted, butter and caraway seed or pepper being added. It is then molded by hand, dried for a few hours, and ripened in a cellar.

WHITE.

Fromage Blanc, or White cheese, is a skim-milk cheese made in France during the summer months. The milk is set with rennet at about 75° F. The curd is usually molded into cylindrical forms. The cheese is consumed while fresh and may or may not be salted.

WITHANIA.

This is so called because made with rennet manufactured from withania berries. Cheese made with the rennet of these berries is said to have an agreeable flavor if ripened to the right degree, but with age it develops an acrid flavor. The texture is not so good as with animal rennet. This form of rennet is recommended for use in India, where the religion and prejudice of the people make the use of animal rennet impracticable.

YOGURT.

This name has been applied to cheese made in limited quantities in the United States where cultures of the *Bacillus bulgaricus* have been used for developing the acidity of the milk. A similar cheese made in England is called Saint Wel.

ZIEGEL.

This is a cheese made in Austria either from cows' milk, whole, or from whole milk to which 15 per cent of cream has been added. The cheese measures 3 by 2 by 2½ inches, and weighs about one-half pound.

In making the whole-milk cheese the milk is warmed to 95° F. and sufficient rennet is added to coagulate it in 30 minutes. The curd is broken up with a harp and cut loose from the bottom of the vessel, after which it is allowed to remain undisturbed for 30 minutes. At the end of this time the curd, which is again matted together, is cut into pieces and stirred gently for a considerable time, after which it is allowed to stand again for 15 minutes. The collected whey is then dipped off, and the curd is dipped into forms which are 24 inches long, 5 inches high, and hold the curd of 7½ or 8 gallons of milk. Before the form is filled, a cheesecloth is placed in it, which helps in turning the curd The curd remains in the form 24 hours to drain, and is then cut into measured sizes and placed in another form, where it is allowed to remain for eight days, the curd being turned and the board on which the form rests being changed

daily. Salt is then sprinkled on the cheese, and for one month it is washed in salt water and rubbed with the hands every day. It is ready for market in eight weeks from the time of making.

ZIGER.

This is a cheese made from the whey obtained in the manufacture of other cheese. It consists principally of albumin, but if no effort is made to separate the fat from the whey the product may contain a relatively high proportion of fat. It is a cheap food product made in all the countries of central Europe. Among the many names applied to it are Albumin cheese, Recuit, Ricotta, Broccio, Brocotte, Sérac, and Ceracee.

In the manufacture of this product an effort is sometimes made to remove the fat remaining in the whey, but in most cases it is allowed to remain. Where it is desired to skim the whey, a small portion of very sour whey, previously prepared, is added to the sweet whey, and the whole is heated to 160° or 175° F. for a few minutes, when the fat collects on the surface and can be skimmed off. Following this, a greater portion of sour whey is added and the whey is then heated nearly to the boiling point, when the albumin is precipitated in a flocculent condition and rises to the surface. When the whey is not in normal condition the albumin may be precipitated in a powdery mass. This is often prevented by adding 3 to 5 per cent of buttermilk to the whey before the last heating. The casein of the buttermilk is precipitated, the albumin being carried with it. It is considered that this addition of casein injures the product. The albumin when skimmed from the whey is salted and packed in a vessel and may be covered with whey.

A cheese called formed Ziger is made by molding the half-dried albumin into squares, which may be still further dried. Some of these have local names, such as the Hudelziger, made in the Canton of Glarus, Switzerland.

In Vorarlberg the albumin is skimmed from the whey, allowed to cool, placed in cheesecloth, and subjected to increasing pressure in an Emmental cheese press. After 24 hours the cheese is put into a salt bath, to which sweet cider or vinegar is sometimes added.

A mixture of Ziger and cream prepared in the Savoy is known as Gruau de Montague. An albumin cheese made from the whey of goats'-milk cheese in the Canton of Graubünden, Switzerland, is known as Mascarpone.

In New York there are factories that make this cheese, label it "Ricotta," and sell it to Italians.

ANALYSES OF CHEESE.[1]

Variety.	Authority.[2]	Number of analyses.	Water.	Fat.	Proteids, amids, etc.	Milk sugar, lactic acid, etc.	Total ash.	Salt in ash.
			Per ct.	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*
Alemtejo	Hoffman	1	30.22	38.25	20.87	3.06	7.60	2.90
	Pereira	4 Average	41.11	27.49	21.45	4.66	6.07	2.05
		4 Maximum	48.39	31.59	24.33	5.24	6.40	3.20
		4 Minimum	32.97	25.27	17.77	3.82	5.87	1.18
Backstein	Fleischmann	2	73.12	2.76	19.84	2.17	2.11	.....
	Lindt	2	61.04	6.80	23.85	3.48	4.83	.....
			45.24	28.16	23.14	.....	3.46	.....
			35.80	37.40	24.44	.....	2.36	.....
Battelmat	Eugling	7 Average	47.71	24.08	22.99	2.35	2.87	.....
		7 Maximum	50.53	29.42	24.48	3.35	3.14	.....
		7 Minimum	44.24	20.52	21.22	2.25	2.71	.....

[1] These analyses are copied principally from literature and are not vouched for by authors.
[2] See Sources of analytical data for details.

Analyses of cheese—Continued.

Variety.	Authority.	Number of analyses.	Water.	Fat.	Proteids, amids, etc.	Milk sugar, lactic acid, etc.	Total ash.	Salt in ash.
			Per ct.	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*
Bellelay	Benecke	1	39.62	30.10	25.70	.....	4.72	3.35
	Lindt	1	37.59	30.05	28.88	.....	3.48	.....
Bondon	Chattaway	1	39.50	24.40	9.40	.....	.70	.....
	Lindet	1	54.30	23.00	16.10	.....	5.00	4.30
Brick	Weems	1	38.69	28.86	23.80	.....	4.20	.....
	Bureau of Chemistry.	4 Average	42.47	30.66	21.05	.....	2.98	.....
		4 Maximum	45.26	33.77	23.29	.....	4.20	.....
		4 Minimum	39.61	28.34	20.03	.....	1.68	.....
Brie—Imported	Balland	2	48.80	22.45	19.94	4.85	3.96	.....
			43.90	28.93	19.04	6.63	1.50	.....
	Blyth	1	51.90	24.80	18.10	.....	5.00	.....
	Duclaux	5 Average	50.04	27.50	18.34	.....	4.12	3.22
		5 Maximum	53.84	29.50	19.94	.....	4.37	3.70
		5 Minimum	46.06	24.60	17.16	.....	3.57	2.67
	Von Klenze	1	55.69	21.42	17.29	.....	5.60	.....
	Lindet	1	53.50	22.50	18.00	.....	4.00	3.20
	Payen	2	53.99	24.83	14.94	.....	5.63	.....
			45.25	25.73	18.48	4.93	5.61	.....
	Bureau of Chemistry.	6 Average	52.53	22.44	20.94	.....	4.81	.....
		6 Maximum	58.93	25.64	24.05	.....	5.25	.....
		6 Minimum	48.16	19.71	17.03	.....	4.39	.....
Brie—American	Arnold	1	41.50	36.15	17.63	.....	4.70	.....
	Johnson	1	60.20	20.96	15.94	1.37	1.53	.40
	Bureau of Chemistry.	12 Average	52.10	24.72	19.60	.....	4.06	.....
		12 Maximum	59.20	30.71	23.35	.....	1.13	.....
		12 Minimum	42.93	15.53	14.80	.....	.....	.....
Brinsen	Maior	2	49.20	22.30	23.10	1.00	4.40	.....
			37.70	32.60	25.20	2.70	5.80	.....
	Melikoff	3	43.10	27.70	19.90	1.20	7.30	.....
			49.70	27.00	14.30	1.80	6.80	.....
			52.20	26.20	14.40	1.30	6.00	.....
Burgundy	Balland	1	29.50	38.55	28.84	1.65	1.46	.....
Caciocavallo	Sartori	2	19.76	36.71	37.83	.....	5.60	3.26
			22.09	35.90	36.06	.....	5.80	3.16
	Spica	9 Average	23.68	25.49	29.25	.....	7.63	3.39
		9 Maximum	33.24	30.09	35.09	.....	10.50	6.23
		9 Minimum	15.34	19.00	22.16	.....	5.79	2.10
	Bureau of Chemistry.	4 Average	34.95	21.98	34.33	.....	6.96	.....
		4 Maximum	39.75	27.08	42.55	.....	7.77	.....
		4 Minimum	32.20	12.88	30.88	.....	5.08	.....
Caerphilly	Chattaway	1	24.80	30.40	37.20	.....	3.40	.....
Cambridge	Chattaway	1	32.10	47.10	24.60	.....	4.40	.....
Camembert—Imported.	Arnold	1	50.41	20.55	25.49	.....	3.52	.....
	Balland	1	49.00	21.65	18.72	5.95	4.68	.....
	Chattaway	2	47.90	21.90	21.80	.....	4.70	.....
			43.40	22.60	24.40	.....	3.80	.....
	Duclaux	1	45.24	30.31	19.75	.....	4.70	3.69
	Krüger	1	59.42	17.24	17.13	4.70	1.56	.....
	Lindet	1	53.80	22.00	17.10	.....	4.40	3.20
	Macoir	1	49.87	25.54	18.76	.....	5.83	4.01
	Muter	1	48.78	21.35	21.07	.....	3.46	.....
	Payen	1	51.94	21.05	18.90	4.40	4.71	.....
	Rollet	1	52.98	23.71	19.12	.....	4.19	3.21
	Stutzer	1	50.90	27.30	18.66	.....	3.14	2.21
	Bureau of Chemistry.	49 Average	47.88	26.32	22.21	.....	4.11	.....
		49 Maximum	61.14	39.76	30.43	.....	5.55	.....
		49 Minimum	24.74	13.94	14.86	.....	2.66	.....
American	do	6 Average	47.37	26.58	23.18	.....	3.98	.....
		6 Maximum	57.87	40.08	32.16	.....	6.86	.....
		6 Minimum	29.20	10.44	16.84	.....	2.51	.....
	Dox and Edmond	12 Average	47.91	27.33	19.66	.....	.....	.....
Cantal	Balland	3	28.50	34.10	28.38	4.46	4.56	.....
			35.10	28.30	24.98	7.22	4.40	.....
			39.00	26.90	24.22	5.93	3.95	.....
	Duclaux	4 Average	43.48	25.70	22.55	6.47	.....	2.05
		4 Maximum	44.80	31.10	24.10	7.50	.....	3.10
		4 Minimum	40.70	22.50	21.50	4.30	.....	.80
	Lindet	1	40.90	29.30	20.50	.....	4.80	2.60
	Patrick (2)	1	39.92	28.14	28.84	.....	4.50	.....
Cheddar—American	Caldwell	8 Average	34.04	35.56	26.87	.....	3.40	.....
		8 Maximum	38.50	41.03	28.15	.....	4.05	.....
		8 Minimum	28.11	31.19	25.57	.....	2.71	.....
		Average	24.93	32.62	38.01	.....	4.42	.....
	Cooke	3	35.38	32.50	23.91	.....	3.73	.....
			37.56	27.70	25.58	.....	3.96	.....
	Drew	201 Average	34.62	37.52	20.19	.....	3.71	.....
			31.05	35.54	33.41	.....	.....	.....

Analyses of cheese—Continued.

Variety.	Authority.	Number of analyses.	Water.	Fat.	Proteids, amids, etc.	Milk sugar, lactic acid, etc.	Total ash.	Salt in ash.
			Per ct.	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*
Cheddar—Continued.								
American	Goessmann	6 Average	40.32	26.05	29.89	.....	3.74	.....
		6 Maximum	45.41	37.32	34.94	.....	5.14	.....
		6 Minimum	35.83	15.77	22.13	.....	2.35	.....
	Patrick (1)	151 Average	33.09	38.78	21.93	1.99	4.09	.....
		151 Maximum	38.36	49.56	31.76	2.34	4.73	.....
		151 Minimum	26.48	24.77	15.38	1.65	2.43	.....
	Snyder	5 Average	32.71	35.25	26.81	.....	.....	.....
		50[2] Average	37.14	34.65	23.64	.....	[3]4.57	.....
		156[4] Average	36.84	33.83	23.72	.....	[3]5.61	.....
		156[4] Maximum	43.89	36.79	26.11	.....	7.02	.....
		156[4] Minimum	32.69	30.00	20.80	.....	3.12	.....
	Van Slyke	95 Average	36.06	34.43	24.45	.61	3.61	.....
		95 Maximum	41.15	45.36	28.72	.76	5.29	.....
		95 Minimum	32.23	23.27	18.45	.51	1.81	.....
		66 Average	34.01	36.81	25.69	.....	[3]3.50	.....
		66 Maximum	38.10	44.33	30.09	.....	4.59	.....
		66 Minimum	29.85	27.22	21.53	.....	2.72	.....
	Voelcker	4 Average	32.39	31.44	26.57	5.02	4.57	1.49
	Wallace	157 Average	36.42	36.95	21.15	1.36	3.81	.....
		157 Maximum	41.65	46.80	32.09	2.68	4.61	.....
		157 Minimum	30.25	21.77	14.11	.41	2.55	.....
	Wilson	3	30.53	41.58	23.38	2.45	2.06	.....
			31.70	36.18	27.19	1.95	2.98	.....
			43.82	5.98	45.04	3.12	2.06	.....
Skimmed—								
	Bureau of Chemistry.	121 Average	57.04	4.88	32.09	.....	3.76	.....
		121 Maximum	67.25	6.08	36.81	.....	4.71	.....
		121 Minimum	50.39	2.67	22.65	.....	2.03	.....
Partly skimmed—								
	Bureau of Chemistry.	27 Average	38.91	18.16	35.38	.....	3.74	.....
		27 Maximum	55.93	26.04	36.37	.....	4.31	.....
		27 Minimum	33.67	7.73	22.14	.....	2.88	.....
Cheddar—								
Canadian	Chattaway	1	33.30	30.60	27.60	.....	3.60	.....
	Clark	11 Average	34.07	22.54	40.02	.....	3.45	.....
		11 Maximum	36.58	25.67	43.52	.....	3.93	.....
		11 Minimum	32.28	20.13	33.82	.....	3.14	.....
	Shuttelworth	5[7] Average	34.60	35.51	23.18	.....	[3]6.70	.....
		6[8] Average	32.53	36.06	23.94	.....	[3]7.48	.....
		135[9] Average	36.54	33.81	23.96	.....	[3]5.60	.....
		135[9] Average'	33.51	32.97	24.94	.....	[3]8.58	.....
Cheddar—								
English	Blyth	2 Average	28.10	22.50	45.60	.....	4.10	.....
	Chattaway	4 Average	35.00	29.02	27.72	.....	3.12	.....
		4 Maximum	37.70	30.50	29.00	.....	4.30	.....
		4 Minimum	33.00	25.00	26.70	.....	3.00	.....
	Griffiths	1	36.34	34.36	22.98	2.10	4.22	.....
	Hassall	1	30.10	36.54	30.15	.....	3.21	.....
	Jones	1	36.04	30.40	28.98	.....	4.58	.....
	Lloyd	31 Average	35.52	30.33	30.04	.....	4.05	.....
		31 Maximum	37.73	34.65	35.10	.....	4.60	.....
		31 Minimum	32.85	24.00	22.77	.....	3.40	.....
	Voelcker	13 Average	35.16	30.45	27.80	3.16	3.42	.70
		13 Maximum	39.43	41.58	32.37	6.80	4.31	1.55
		13 Minimum	30.32	23.21	23.28	.22	2.06	.09
	Von Klenze	1	35.22	27.91	33.47	.....	3.40	.....
Cheddar—								
Queensland	Brunnich	2	31.62	35.17	24.59	.....	4.09	1.44
			27.67	37.35	26.24	.....	4.04	.....
Cheshire	Arnold	1	24.69	37.08	33.36	.....	4.85	.....
	Balland	1	22.60	39.50	27.16	6.80	3.94	.....
	Blades	6 Average	44.59	21.55	29.25	.....	4.61	.....
		6 Maximum	52.60	30.67	32.95	.....	5.00	.....
		6 Minimum	36.10	9.85	24.44	.....	3.90	.....
	Chattaway	2	37.80	31.30	25.70	.....	4.20	.....
			31.60	35.30	26.50	.....	4.40	.....
	Griffiths	1	27.55	36.00	31.00	2.21	3.24	.....
	Lindet	1	31.10	32.30	30.90	.....	3.70	1.30

[1] The 15 analyses are each the average of 5 monthly analyses. The green cheese was analyzed by Wallace.
[2] Green cheese made at New York State Agricultural Experiment Station, 1892.
[3] Sugar, ash, etc.
[4] Green cheese made at numerous factories in New York, 1892 and 1893.
[5] Age of cheese, seven weeks.
[6] Age of cheese, five months.
[7] Green cheese.
[8] Age of cheese, 1 month.
[9] Cured cheese.

Analyses of cheese—Continued.

Variety.	Authority.	Number of analyses.		Water.	Fat.	Proteids, amids, etc.	Milk sugar, lactic acid, etc.	Total ash.	Salt in ash.
				Per ct.	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct*
Cheshire—Continued.	Payen	2		30.39	25.48	34.75	.....	4.78	.....
				35.92	26.34	25.99	7.59	4.16	.....
	Voelcker	2		36.96	29.34	24.08	5.17	4.45	1.91
				32.59	32.51	26.06	4.53	4.31	1.59
Club	Bureau of Chemistry.	24	Average	31.74	35.78	26.62	.....	4.00	.....
			Maximum	34.55	40.88	28.33	.....	4.57	.....
			Minimum	25.37	32.23	24.17	.....	3.29	.....
Cotherstone	Griffiths	1		38.20	30.25	23.82	3.81	3.92	.....
	Voelcker	2		38.28	30.89	23.93	3.70	3.20	.79
				38.23	29.12	24.38	2.76	5.51	2.55
Cottage	Bureau of Chemistry.	5	Average	69.82	1.03	23.26	.....	1.91	.....
			Maximum	72.98	1.94	32.47	.....	2.49	.....
			Minimum	63.46	0.87	20.16	.....	1.56	.....
Coulommiers	Balland	1		50.40	20.45	17.41	4.80	6.94	.....
	Lindet	2		53.00	21.50	16.90	.....	5.70	4.80
				57.80	25.00	13.00	.....	4.10	3.60
Cream—									
English	Chattaway	2		57.60	39.30	19.00	.....	3.40	.....
	Hassall	1		14.00	68.10	20.10	.....	1.20	.....
	Payen	1		30.34	67.32	2.02	.....	.32	.....
	Vieth	8	Average	9.48	59.88	18.40	5.77	6.47	.....
			Maximum	36.49	56.08	5.28	1.27	.82	.....
			Minimum	47.94	66.80	8.77	2.50	1.48	.....
Cream—				27.69	43.76	2.00	.22	.44	.....
French Demi-sel.	Balland	1		52.10	25.20	13.49	8.28	.93	.....
	Lindet	1		49.60	34.00	11.80	.....	3.00	2.40
	Bureau of Chemistry.	23	Average	42.74	39.88	14.49	.....	1.88	.....
			Maximum	57.33	48.65	18.31	.....	4.75	.....
			Minimum	34.15	28.40	10.08	.....	.99	.....
	Currie	4	Average	36.91	44.19	14.60	.....	.....	.....
			Maximum	44.00	48.00	16.02	.....	.....	.....
			Minimum	30.00	38.60	12.73	.....	.....	.....
Crescenza	Duclaux	1		56.75	21.34	18.91	.....	2.90	1.34
Danish Export	Storch	9	Average	45.99	13.41	30.01	5.10	3.63	1.86
			Maximum	49.88	23.70	34.00	5.90	4.17	2.55
			Minimum	38.78	9.34	27.69	2.65	3.33	1.11
Derbyshire	Sheldon	1		31.60	35.20	24.50	4.38	4.24	.....
Dorset	Griffiths	1		41.44	27.56	22.25	4.24	4.51	.....
	Vieth	1		41.55	8.76	44.09	.....	5.60	2.93
Dunlop	Jones	1		38.46	31.86	25.87	.....	3.81	.....
Edam	Arnold	2		29.23	28.71	33.89	.....	8.14	.....
				29.56	27.43	32.31	.....	8.49	.....
	Balland	2		37.90	25.90	27.32	4.08	4.80	.....
				38.50	24.29	25.34	9.07	2.80	.....
	Cribb	4	Average	51.66	11.85	26.82	.....	6.04	.....
			Maximum	60.38	24.40	31.92	.....	7.33	.....
			Minimum	41.70	3.83	24.00	.....	5.54	.....
	Dahl	3		32.57	32.19	23.98	6.25	4.67	.....
				33.62	33.99	23.48	6.34	2.42	.....
				42.85	26.73	19.39	5.15	5.62	.....
	Hassall	1		30.10	27.57	32.81	.....	6.84	.....
	Von Klenze	1		41.88	24.05	29.47	.....	4.60	.....
	Lindet	1		42.60	20.00	23.90	.....	5.50	3.20
	Mayer	1		33.20	28.00	29.60	2.60	6.60	3.30
	Patrick (2)	1		32.80	29.58	28.41	.....	5.55	.....
	Payen	2		36.10	27.54	29.43	.....	6.93	.....
				41.41	25.06	25.63	.....	6.21	.....
Edam-American	Haecker	3[1]		48.69	23.21	21.49	3.83	3.02	.....
				44.44	25.37	22.69	3.79	2.59	.....
				46.80	23.30	24.24	2.92	3.68	.....
	Van Slyke	18[1]	Average	47.55	24.42	22.18	.....	[2] 5.80	.....
			Maximum	55.34	31.75	24.70	.....	9.46	.....
			Minimum	41.25	19.73	18.95	.....	2.51	.....
	Bureau of Chemistry.	53	Average	38.07	22.65	30.89	.....	6.19	.....
			Maximum	47.27	31.85	40.64	.....	8.59	.....
			Minimum	28.87	7.67	24.75	.....	3.81	.....
Emmental	Benecke	7	Average	37.77	23.92	30.97	.....	6.85	3.80
			Maximum	47.54	34.70	37.65	.....	11.09	7.59
			Minimum	30.49	5.75	25.51	.....	4.60	1.19
	Hornig	1		33.53	30.29	29.99	.31	5.88	.....
	Von Klenze	1		35.18	27.99	32.23	.....	4.60	.....
	Lindt	5	Average	33.00	30.50	30.44	.....	4.17	.....
			Maximum	37.44	33.37	37.51	.....	4.95	.....
			Minimum	24.17	28.54	30.34	.....	3.38	.....
Engandine	.....do	1		47.30	11.40	36.34	.....	4.96	.....

[1] Green cheese.

[2] Sugar, ash, etc.

Analyses of cheese—Continued.

Variety.	Authority.	Number of analyses.	Water.	Fat.	Proteids, amids, etc.	Milk sugar, lactic acid, etc.	Total ash.	Salt in ash.
			Per ct.	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*
Formaggini di Lecco.	Cornalba	2	61.00	19.20	16.37	.....	3.43	1.90
			16.66	41.50	35.80	.....	6.10	3.00
Frühstücks Käschen.	Bureau of Chemistry.	10 Average	49.93	25.93	19.43	.....	4.62	.....
		10 Maximum	59.95	33.88	24.82	.....	6.47	.....
		10 Minimum	39.40	16.96	15.63	.....	3.31	.....
Gammelost	Voelcker	1	42.44	3.36	42.12	9.85	2.22	.....
	Bureau of Chemistry.	4 Average	45.34	4.20	49.14	.....	1.49	.....
		4 Maximum	46.25	8.07	50.91	.....	1.76	.....
		4 Minimum	43.50	2.31	44.08	.....	1.18	.....
Gervais	Balland	4 Average	51.58	31.98	11.30	4.29	.60	.....
		4 Maximum	58.00	40.47	19.94	7.09	1.42	.....
		4 Minimum	44.70	26.85	7.20	2.13	.25	.....
	König	1	52.94	29.75	11.80	2.58	2.93	.....
	Richmond	1	33.80	57.79	7.90	.....	.50	.....
	Stutzer	1	44.84	36.73	15.48	.....	2.95	.76
	Bureau of Chemistry.	1	35.22	51.21	11.93	.....	2.21	.....
Gex	Balland	2	31.50	28.85	29.96	5.51	4.18	.....
			32.10	32.20	29.86	.34	5.50	.....
Gislev	Böggild	1	49.22	2.96	41.53	.....	.....	.....
Gloucester	Bell	1	35.75	28.35	31.10	.31	4.49	.....
	Blyth	1	21.40	25.40	48.10	.....	4.10	.....
	Chattaway	2	33.10	23.50	31.80	.....	5.00	.....
			37.40	28.10	28.30	.....	4.60	.....
	Griffiths	1	34.10	37.92	21.68	1.98	4.32	.....
	Hassall	1	32.52	29.94	31.70	.....	5.84	.....
	Jones	1	35.81	21.97	37.96	.....	4.25	.....
	Voelcker	13 Average	34.80	28.02	27.96	4.37	4.53	1.34
		13 Maximum	40.88	33.68	31.75	7.44	5.70	2.04
		13 Minimum	28.10	22.70	24.50	1.22	3.56	.85
Goats'-milk—French.	Balland	1	20.80	25.90	33.60	15.30	4.40	.....
	Lindet	1	64.80	9.20	17.10	.....	5.80	4.90
	Patrick (2)	1	17.73	46.64	27.90	.....	4.74	.....
Goats'-milk — Norwegian.	Werenskiold	8 Average	20.90	19.86	7.62	46.81	6.06	.....
		8 Maximum	26.53	32.68	10.63	58.07	6.57	.....
		8 Minimum	15.53	10.98	4.43	39.04	5.14	.....
Gorgonzola	Bell	1	31.85	27.88	34.34	1.35	4.58	2.11
	Chattaway	2	40.30	26.10	27.70	.....	5.30	.....
			33.90	26.70	25.80	.....	4.60	.....
	Duclaux	2	42.80	29.70	23.14	.....	4.36	2.21
			38.69	34.07	22.78	.....	4.46	2.64
	Hornig	1	36.72	33.69	25.67	.21	3.71	.....
	Von Klenze	1	26.81	35.29	33.80	.....	4.10	.....
	Lindet	1	41.50	29.00	19.70	.....	4.80	2.60
	Maggiora	3	34.41	37.52	26.75	.....	4.08	1.33
			32.43	34.08	25.94	.....	[1] 6.77	.99
			37.63	36.19	26.94	.....	[1] 10.46	.92
	Musso	7 Average	37.30	34.67	25.16	1.62	3.82	.....
		7 Maximum	47.10	39.32	28.51	2.00	4.63	.....
		7 Minimum	29.82	29.00	20.33	.91	3.13	.....
	Soxhlet	1	43.56	27.95	24.17	.....	4.32	.....
	Bureau of Chemistry.	1 (German)	33.72	33.60	28.39	.....	3.52	.....
			38.96	30.76	26.22	.....	3.84	.....
Gouda	Arnold	1	21.90	24.81	46.95	.....	6.32	.....
	Cribb	11 Average	54.79	9.02	25.94	.....	5.52	.....
		11 Maximum	60.17	18.37	34.22	.....	7.30	.....
		11 Minimum	50.46	1.64	22.05	.....	4.26	.....
	Mayer	1	38.80	31.20	24.40	.....	5.60	2.80
	Patrick (2)	1	35.23	29.40	27.01	.....	5.41	.....
	Vieth	1	42.58	16.18	37.43	.....	3.81	3.68
Gouda—American	Haecker	3 [2]	46.03	31.13	18.01	3.04	2.55	.....
			46.52	29.04	19.25	3.18	2.88	.....
			46.59	28.29	19.64	3.40	3.12	.....
	Bureau of Chemistry.	6 Average	38.11	24.50	29.58	.....	6.07	.....
		6 Maximum	42.31	30.72	35.32	.....	7.83	.....
		6 Minimum	31.04	15.05	26.41	.....	5.51	.....
Gruyère	Balland	9 Average	29.99	28.19	33.03	4.82	3.96	.....
		9 Maximum	33.10	33.40	37.80	7.40	4.70	.....
		9 Minimum	27.50	23.10	29.54	1.50	3.50	.....
	Benecke	1	40.61	26.59	26.18	1.94	4.68	2.10
	Chattaway	2	28.20	28.60	31.30	.....	4.70	.....
			35.70	31.80	28.70	.....	3.70	.....
	Duclaux	1	36.00	29.29	30.84	.....	3.87	.57
	Lindet	1	35.70	28.00	28.90	.....	3.50	.40

[1] Abnormally high ash content was due to a gypsum preparation with which the cheese was coated.
[2] Green cheese.

Analyses of cheese—Continued.

Variety.	Authority.	Number of analyses.	Water.	Fat.	Proteids, amids, etc.	Milk sugar, lactic acid, etc.	Total ash.	Salt in ash.
			Per ct.	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*
Gruyère	Lindt	2	34.57	29.12	32.51	.....	3.80	.....
			35.74	30.64	29.95	.....	3.67	.....
	Payen	2	40.00	24.00	31.50	1.50	3.00	.....
			32.05	28.40	33.75	.....	4.79	.....
Harz	Vieth	1	55.79	1.34	37.01	.....	5.86	4.16
	Vieth	3	50.19	1.64	27.72	[1]14.80	5.65	.....
			52.49	1.83	22.43	[1]18.00	5.25	4.12
			52.75	1.11	19.38	[1]21.40	5.36	4.08
Hervé	Balland	1	37.50	23.93	20.86	7.71	10.00	.....
Ilha	Hoffmann	1	28.39	32.00	30.62	2.85	6.14	1.66
	Pereira	1	36.89	27.15	24.30	7.71	3.95	1.50
Incanestrato	Spica	14 Average	29.07	24.74	30.09	.....	9.46	5.04
		14 Maximum	32.48	37.48	38.66	.....	12.70	8.12
		14 Minimum	26.02	15.88	25.16	.....	4.58	.78
Isigny	Bureau of Chemistry.	9 Average	52.04	23.41	20.59	.....	3.97	.....
		9 Maximum	60.90	37.48	30.50	.....	4.83	.....
		9 Minimum	27.47	14.22	16.21	.....	2.71	.....
Kajmak	Zega	10 Average	31.55	55.79	6.25	2.01	4.50	3.07
		10 Maximum	36.03	63.82	8.73	3.20	8.38	7.36
		10 Minimum	23.97	50.16	4.94	.42	2.61	1.10
Kascaval	Maior	2	50.50	14.10	28.10	2.50	4.80	.....
			39.10	25.50	28.00	1.40	6.00	.....
Katschkawalj	Zega	16 Average	35.25	31.24	24.25	2.84	6.42	3.95
Koppen	Bureau of Chemistry.	4 Average	55.16	24.47	16.96	.....	3.56	.....
		4 Maximum	55.79	24.64	17.42	.....	3.84	.....
		4 Minimum	54.67	24.38	16.14	.....	2.98	.....
Krutt	Leutner	2	8.59	1.31	78.68	1.93	9.46	8.01
			10.14	1.45	69.74	.81	17.84	13.34
Laguiole	Balland	1	34.50	25.20	28.70	6.15	5.45	.....
Leicester	Griffiths	1	34.77	28.00	27.86	5.21	4.16	.....
	Voelcker	2	35.21	27.28	27.93	5.54	4.04	1.03
			32.89	29.28	29.06	4.42	4.35	1.21
Leyden	Mayer	1	46.90	11.00	35.90	1.00	5.20	1.40
	Bureau of Chemistry.	5 Average	40.58	13.48	37.77	.....	5.22	.....
		5 Maximum	43.30	14.50	39.30	.....	5.96	.....
		5 Minimum	35.35	11.20	34.90	.....	4.26	.....
Liederkranz	.....do	4 Average	55.12	24.45	16.78	.....	3.89	.....
		4 Maximum	56.74	25.50	18.25	.....	4.35	.....
		4 Minimum	54.10	23.60	15.76	.....	3.56	.....
Limburg—American	Arnold	4 Average	35.64	29.82	28.53	.....	5.98	.....
		4 Maximum	48.60	34.98	35.05	.....	6.69	.....
		4 Minimum	23.26	21.29	23.58	.....	4.82	.....
	Johnson	1	42.12	29.40	23.00	.38	5.10	3.51
	Bureau of Chemistry.	6 Average	46.35	28.26	21.62	.....	3.95	.....
		6 Maximum	49.41	30.33	23.99	.....	5.03	.....
		6 Minimum	41.12	27.72	20.17	.....	3.03	.....
Imported	.....do	5 Average	54.79	19.61	21.27	.....	5.17	.....
		5 Maximum	58.48	21.95	23.61	.....	5.50	.....
		5 Minimum	49.86	16.25	19.58	.....	4.39	.....
Livarot	Balland	1	33.80	21.95	31.76	8.05	4.44	.....
	Lindet	1	52.20	15.00	25.90	.....	4.40	2.90
Mainz Hand	Von Klenze	1	53.74	5.55	37.33	.....	3.38	.....
Maroilles	Lindet	1	40.30	33.50	20.20	.....	4.50	3.30
	Payen	1	40.07	28.73	23.31	.....	5.93	.....
Mascarpone	Fascetti	2	45.88	45.30	8.14	.....	.68	.....
			43.38	49.50	7.62	.....	.50	.....
Mont-d'Or	Balland	1	43.20	23.97	20.10	8.84	3.89	.....
	Lindet	1	58.70	9.70	25.30	.....	4.30	1.90
	Bureau of Chemistry.	1	41.26	33.05	21.12	.....	2.32	.....
Münster	Balland	2	45.40	25.90	16.86	6.88	4.96	.....
		1	37.50	29.83	18.17	9.75	4.75	.....
American	Lindet	1	52.40	24.40	15.50	.....	5.00	3.70
	Bureau of Chemistry.	2	33.63	31.60	28.65	.....	8.62	.....
			36.83	33.80	24.63	.....	3.88	.....
American	.....do	1	40.60	31.00	22.20	.....	4.63	.....
Mysost	Dahl	6 Average	23.57	16.26	8.88	44.84	4.76	.....
		6 Maximum	26.49	20.98	10.78	53.03	6.09	.....
		6 Minimum	18.58	9.63	6.79	30.75	3.28	.....
	Voelcker	1	24.21	20.80	9.06	41.01	4.92	.....
	Werenskiold	22 Average	29.43	4.08	7.66	53.24	5.75	.....
		22 Maximum	38.01	10.54	9.19	61.38	6.38	.....
		22 Minimum	24.37	.07	6.34	46.00	5.06	.....
	Bureau of Chemistry.	5 Average	14.41	25.70	10.91	.....	5.34	.....
		5 Maximum	26.56	34.51	13.97	.....	6.23	.....
		5 Minimum	10.05	18.22	9.06	.....	4.56	.....

[1] Caraway seed.

Analyses of cheese—Continued.

Variety.	Authority.	Number of analyses.	Water.	Fat.	Proteids, amids, etc.	Milk sugar, lactic acid, etc.	Total ash.	Salt in ash.
Mysost—Continued.			*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*
American	Bureau of Chemistry.	5 Average	23.74	2.79	9.86	.....	5.77	.....
		5 Maximum	28.16	4.26	10.85	.....	6.34	.....
		5 Minimum	20.92	1.19	9.25	.....	5.09	.....
Neufchâtel	Balland	2	50.80	25.15	17.60	5.12	1.33	.....
			54.80	20.59	14.43	5.98	4.20	.....
	Blyth	1	37.90	41.30	23.10	.....	3.40	.....
	Von Klenze	1	51.72	23.99	20.73	.....	3.56	.....
	Martin	2	56.08	23.34	16.67	1.42	2.49	1.44
			57.83	21.00	17.00	1.32	2.85	1.90
	Payen	2	34.47	41.91	13.03	6.96	3.63	.....
			36.58	40.71	14.18	9.02	.51	.....
American	Bureau of Chemistry.	5 Average	52.05	23.51	19.33	.....	4.97	.....
		5 Maximum	60.45	34.87	23.28	.....	6.26	.....
		5 Minimum	36.64	16.25	16.08	.....	4.05	.....
	Arnold	1	37.45	34.60	24.04	.....	3.90	.....
	Johnson	1	57.25	22.30	15.03	2.94	2.48	1.42
	Bureau of Chemistry.	42 Average	59.22	18.17	21.30	.....	2.43	.....
		42 Maximum	70.46	33.65	28.84	.....	4.77	.....
		42 Minimum	42.17	1.14	16.08	.....	1.12	.....
	Currie	3 Average	50.33	26.09	19.91	(1)	.....	.....
		3 Maximum	53.52	29.90	20.75	.....	.....	.....
		3 Minimum	45.46	23.29	19.30	.....	.....	.....
Nögelost	Dahl	3	48.51	6.13	32.72	8.59	3.79	.....
			47.12	7.36	31.63	10.36	3.41	.....
			40.54	16.87	31.29	7.90	3.17	.....
	Voelcker	3	43.87	15.89	29.93	6.47	4.84	.....
			45.39	9.97	33.12	6.39	5.13	.....
			42.44	3.36	42.12	9.85	2.22	.....
Olivet	Balland	1	28.40	48.16	13.98	5.16	4.30	.....
Olmütz	Hornig	1	44.54	3.37	41.04	.16	10.89	.....
	Soxhlet	1	52.49	7.70	38.02	.....	1.79	.....
Parmesan	Arnold	1	23.01	12.49	55.85	.....	8.14	.....
	Chattaway	1	32.50	17.10	43.60	.....	6.20	.....
	Duclaux	2	30.09	26.04	38.42	.....	5.45	1.76
			32.56	21.75	42.27	.....	5.07	1.65
	Lindet	1	34.00	23.00	35.00	.....	5.20	1.70
	Manetti	8 Average	32.16	19.13	43.54	.....	6.29	.....
		8 Maximum	36.11	23.42	48.93	.....	7.18	.....
		8 Minimum	30.20	12.58	38.33	.....	5.20	.....
	Patrick (2)	1	35.39	18.72	35.55	.....	4.82	.....
	Payen	2	27.56	15.95	44.08	6.69	5.72	.....
			30.31	21.68	34.25	.....	7.09	.....
	Soxhlet	1	34.57	21.05	35.15	.....	6.23	.....
Formaggio	Bureau of Chemistry.	4 Average	16.95	22.71	49.39	.....	7.59	.....
		4 Maximum	32.00	23.85	56.70	.....	10.38	.....
		4 Minimum	12.67	16.70	35.94	.....	5.37	.....
Reggiano	....do	6 Average	29.63	27.20	34.84	.....	4.76	.....
		6 Maximum	33.61	30.90	38.66	.....	5.02	.....
		6 Minimum	28.27	24.14	32.73	.....	4.63	.....
Pecorino	Sartori	4 Average	29.80	30.51	33.51	.....	6.24	4.95
		4 Maximum	32.90	31.30	35.59	.....	6.84	5.51
		4 Minimum	27.47	29.96	30.74	.....	5.31	4.34
Romano	Bureau of Chemistry.	15 Average	29.56	27.69	31.20	.....	8.66	.....
		15 Maximum	33.95	30.87	35.28	.....	9.74	.....
		15 Minimum	26.01	24.55	29.16	.....	7.00	.....
Petit Suisse	Lindet	1	54.60	35.00	7.30	.....	.60	.10
Pimiento (Cheddar)	Bureau of Chemistry.	6 Average	48.01	32.25	16.01	.....	1.91	.....
		6 Maximum	55.83	46.21	20.16	.....	2.49	.....
		6 Minimum	37.25	19.03	12.82	.....	1.56	.....
Pineapple	Clark	2	3.59	54.56	36.60	.....	5.25	.....
			5.20	46.46	43.28	.....	5.06	.....
	Johnson	4 Average	24.07	38.12	29.35	2.49	5.69	2.24
		4 Maximum	30.95	45.20	34.45	2.75	6.18	2.61
		4 Minimum	11.62	33.26	27.00	2.16	5.10	1.86
	Bureau of Chemistry.	1	20.61	40.64	31.13	4.63	.....	.....
Pont-l'Évêque	Arnold	1	44.57	21.80	30.36	.....	3.97	.....
	Balland	1	46.40	25.00	20.32	6.68	1.60	.....
	Lindet	1	51.00	23.10	17.80	.....	4.00	1.90
Pont-l'Évêque—American	Arnold	1	26.02	50.80	20.64	.....	2.54	.....
	Bureau of Chemistry.	2	37.46	32.68	25.90	.....	3.61	.....
			46.92	25.95	24.45	.....	2.83	.....

Casein:

Analyses of cheese—Continued.

Variety.	Authority.	Number of analyses.	Water.	Fat.	Proteids, amids, etc.	Milk sugar, lactic acid, etc.	Total ash.	Salt in ash.
			Per ct.	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*
Port du Salut	Balland	1	27.70	35.10	31.16	2.04	4.00	.....
	Duclaux	2	47.51	25.93	22.56	.....	4.00	1.90
			48.02	24.00	24.29	.....	3.69	1.56
	Lindet	1	38.10	24.50	24.80	.....	5.30	2.20
	Rollet	1	46.46	26.31	23.66	.....	3.67	1.31
	Bureau of Chemistry.	1	50.10	25.17	21.18	.....	2.91	.....
Potted—								
American Club House.	Weems	1	38.98	34.01	21.13	.....	1.49	.....
Imperial	do	1	30.63	33.10	26.88	.....	4.22	.....
Royal Paragon	do	1	32.85	31.52	27.74	.....	4.13	.....
Rabacal	Hoffmann	1	16.45	37.36	35.00	2.93	8.26	2.42
Rebbiola	Cornalba	2	46.56	25.55	19.99	.....	7.90	5.80
			45.36	30.56	20.21	.....	3.73	1.22
Reblochon	Lindet		53.20	20.50	19.30	.....	3.70	1.80
Reindeer milk	Werenskiold	1	27.70	43.11	23.79	2.97	2.43	.....
Ricotta	Sartori	1[3]	68.47	5.22	18.72	3.97	3.62	.....
Romadour	Hornig	2	56.60	17.05	18.76	.81	6.78	.....
			51.21	9.16	33.60	.02	6.01	.....
	Von Klenze	1	43.21	10.56	30.18	.....	6.10	.....
	Lindet	1	60.40	11.90	19.60	.....	5.60	3.90
	Patrick (2)	1	55.16	14.76	26.05	.....	5.47	.....
	Vieth	1	44.55	16.16	32.72	.....	6.57	5.80
Roquefort	Arnold	3	28.35	29.98	32.84	.....	8.82	.....
			28.87	33.70	28.82	.....	8.66	.....
			22.47	34.02	34.99	.....	8.24	.....
	Balland	1	28.90	38.30	25.16	3.00	4.64	.....
	Bell	1	32.26	34.38	27.16	1.32	4.88	.....
	Chattaway	1	29.60	30.30	28.30	.....	6.70	.....
	Hornig	1	36.93	31.23	25.79	.....	4.78	.....
	Johnson	1	39.28	29.53	22.62	1.77	6.80	5.27
	Von Klenze	1	38.94	34.14	21.92	.....	5.00	.....
	Lindet	1	36.90	29.50	20.50	.....	7.00	5.10
	Muter	1	21.56	35.96	32.24	.....	10.24	.....
	Patrick (2)	1	34.37	34.54	24.40	.....	6.16	.....
	Payen	2	26.53	32.31	31.69	.....	4.45	.....
			34.55	30.14	26.52	3.72	5.07	.....
	Sieber	2	23.54	40.13	27.00	.....	6.27	.....
			36.93	31.23	25.79	.....	4.78	.....
	Bureau of Chemistry.	12 Average	35.97	34.32	23.06	.....	6.33	.....
		12 Maximum	45.01	39.61	29.10	.....	8.22	.....
		12 Minimum	26.43	26.85	19.93	.....	5.05	.....
German	Bureau of Chemistry.	5 Average	35.40	34.78	21.11	.....	6.53	.....
		5 Maximum	41.27	40.37	22.97	.....	8.22	.....
		5 Minimum	32.22	31.32	18.36	.....	4.29	.....
	Currie	7 Average	38.69	32.31	21.39[2]	.....	6.14	.....
		7 Maximum	40.10	33.53	23.06	.....	6.81	.....
		7 Minimum	37.49	31.50	19.14	.....	5.18	.....
	Sartori	3[4]	43.80	36.46	8.66	10.36	.72	.....
			42.48	31.64	13.61	11.49	.78	.....
			43.29	31.90	12.94	10.75	1.02	.....
Saloio	Hoffmann	1	76.25	1.78	11.37	5.28	5.32	2.49
	Pereira	2	54.37	25.84	13.63	2.96	3.20	2.04
			45.81	27.80	15.16	5.97	5.26	3.17
Sapsago	Arnold	1	13.30	15.52	57.59	.....	13.57	.....
	Benecke	1	47.02	6.60	37.06	.....	10.10	7.53
	Von Klenze	1	38.17	12.27	45.73	.....	3.83	.....
	Bureau of Chemistry.	1	47.75	2.00	41.66	.....	11.87	.....
Savoy	Balland	2	52.40	5.90	28.84	9.38	3.48	.....
			49.70	6.45	27.32	12.53	4.00	.....
Schloss, American	Bureau of Chemistry.	4 Average	48.34	26.35	21.31	.....	3.79	.....
		4 Maximum	56.17	30.07	24.44	.....	4.62	.....
		4 Minimum	40.83	22.47	16.08	.....	2.84	.....
Septmoncel	Balland	1	28.20	31.25	32.06	3.99	4.50	.....
Serra da Estrella	Büttner	5 Average	43.58	27.69	22.02	2.69	4.00	.....
		5 Maximum	47.98	34.56	24.03	6.13	4.35	.....
		5 Minimum	35.22	19.70	20.40	1.55	3.51	.....
	Hoffmann	1	31.87	40.05	22.18	2.24	3.66	.89

[1] Packed in jars. The highest water content was 39.21 per cent.
[2] Casein.
[3] From cows' milk.
[4] From sheep's milk.

Analyses of cheese—Continued.

Variety.	Authority.	Number of analysis.	Water.	Fat.	Proteids, amids, etc.	Milk sugar, lactic acid, etc.	Total ash.	Salt in ash.
			Per ct.	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*
		Average	39.34	27.93	23.48	3.93	5.79	2.57
	Pereira	12 Maximum	50.07	37.93	32.10	6.78	8.96	5.26
		Minimum	24.38	19.30	17.83	.78	3.23	.94
		Average	53.99	19.30	21.32	2.63	3.30	1.86
Servian	Zega	14 Maximum	68.84	32.20	32.37	5.12	4.81	3.13
		Minimum	42.10	7.77	14.66	.85	2.40	.93
Spalen	Benecke	1	28.14	33.69	30.78	2.55	7.38	4.46
			19.40	42.20	21.10	.....	2.60	.....
Stilton	Chattaway	3	21.20	45.80	26.30	.....	2.90	.....
			25.00	34.60	28.40	.....	4.10	.....
	Griffiths	1	31.22	37.24	24.28	3.40	3.86	.....
	Hassall	1	31.37	36.58	27.66	.....	4.39	.....
	Muter	1	28.60	30.70	35.60	1.08	4.02	.75
	Patrick (2)	1	32.97	39.03	23.19	.....	3.24	.....
	Voelcker	2	32.18	37.36	24.31	2.22	3.93	.89
			20.27	43.98	33.55	.....	2.20	.29
	Bureau of Chemistry.	1	33.57	31.19	28.96	.....	3.00	.....
Swiss—American	Arnold	1	38.51	24.84	32.02	.....	4.70	.....
			41.43	29.93	22.13	2.90	3.34	.....
	Haecker	3 [1]	35.91	33.21	24.82	3.32	3.06	.....
			38.40	32.40	22.88	3.24	3.48	.....
	Johnson	1	33.79	33.25	26.12	1.77	5.07	1.85
			34.28	32.60	27.55	.....	4.16	.....
	Bureau of Chemistry.	3	34.77	34.05	28.67	.....	4.21	.....
			33.77	31.67	26.19	.....	4.06	.....
		Average	33.91	30.61	29.22	.....	4.16	.....
Imported	do	6 Maximum	34.54	31.86	30.42	.....	4.91	.....
		Minimum	33.43	28.20	28.20	.....	3.88	.....
		Average	32.74	32.26	24.85	4.43	5.78	2.67
Swiss—Russian	Kalantarow	5 Maximum	35.44	37.20	28.81	6.90	7.44	4.78
		Minimum	29.80	28.97	20.57	.57	4.36	1.45
			29.34	36.44	23.20	6.11	4.78	.....
Swiss—Swedish	Dahl	3	38.64	29.13	23.21	4.36	4.39	.....
			36.02	32.05	24.76	4.59	2.39	.....
Tessel	Mayer	1	54.40	18.30	20.10	1.40	5.80	3.40
Thenay	Blin	1	30.14	15.00	18.12	.....	6.10	4.80
Topfen	König	1	72.44	6.22	16.91	3.07	1.36	.....
	Rubner	1	60.27	7.33	24.84	3.54	4.02	.....
Trappist	Adametz	1	45.90	26.10	23.30	.....	4.00	.....
Troyes	Lindet	1	58.70	18.60	14.60	.....	4.80	3.70
Vacherin	Benecke	1	54.02	23.74	18.98	2.04	3.08	1.77
	Lindt	1	45.87	27.21	25.29	.....	1.63	.....
		Average	48.69	20.90	27.97	.....	4.43	2.79
Vendôme	Fallot	6 Maximum	56.33	30.61	45.52	.....	5.58	3.68
		Minimum	29.63	10.80	17.74	.....	3.10	2.08
Viterbo	Sartori	1	28.50	30.93	34.19	.....	6.38	5.03
		Average	42.99	17.02	31.19	3.79	4.94	.....
Vorarlberg	Eugling	9 Maximum	56.85	31.99	40.11	7.21	6.89	.....
		Minimum	32.92	2.82	25.65	1.81	3.79	.....
			56.61	4.48	36.42	.....	2.49	.....
	Von Klenze	2	50.58	4.56	42.37	.....	2.49	.....
			31.97	29.08	27.43	7.16	4.36	.72
Warwickshire	Voelcker	3	33.61	30.04	29.70	1.95	5.60	2.78
			33.53	30.89	28.19	2.84	4.55	1.12
Wensleydale	Chattaway	1	28.30	33.30	27.20	.....	3.70	.....
Wiltshire	Griffiths	1	37.23	27.82	26.52	3.88	4.55	.....
	Jones	1	36.34	28.00	31.12	.....	4.41	.....
			34.44	28.71	29.00	3.60	4.25	1.03
	Voelcker	3	39.22	19.26	34.22	2.28	5.02	.60
			40.07	25.55	26.81	2.24	5.33	1.41
Yogurt—American	Bureau of Chemistry.	2	52.61	26.54	16.59	.....	2.12	.....
			43.19	33.90	18.44	.....	1.90	.....
			68.51	3.15	22.13	3.97	2.31	.....
Ziger	Eugling	3	74.74	4.33	14.99	3.93	2.02	.....
			68.47	5.22	18.72	3.97	3.62	.....
	Von Klenze	1	31.00	3.48	64.62	.....	.90	.....

SOURCES OF ANALYTICAL DATA.[1]

1. Adametz, L.
   1892. Ueber die Herstellung und Zusammensetzung des bosnischen Trappistenkäses. *In* Milch Ztg. Jahrg. 21, no. 19, p. 310–313.
2. Arnold, L. B.
   1879. Cheese and cheese making. American Dairymen's Association, 14th Ann. Rpt., for the year ending Jan. 15, 1879, p. 145.
   1879. Translated abstract. *In* Milch Ztg., Jahrg. 8, no. 32, p. 468–470, Aug. 6; no. 33, p. 484, Aug. 13; no. 34, p. 500–502, Aug. 20. See p. 502.
3. Ashton, John.
   1912. Cooperative creameries in Holland. *In* Breeder's Gazette, v. 61, no. 2, p. 72, 73.
4. Ballard, A.
   1907. Les aliments, v. 2, p. 237–248. Paris.
5. Bell, James.
   1881. The analysis and adulteration of foods. 2 parts. Illus. 20 cm. London. See also citations 16, 53, 60, 61.
6. Benecke, P., and Schulze, E.
   1887. Untersuchungen über den Emmenthaler Käse und über einige andere schweizerische Käsesorten. *In* Landw. Jahrb., v. 16, p. 317–400. See p. 338, 373.
7. Blades, Charle M.
   1894. Cheshire cheese. *In* The Analyst, v. 19, p. 131–133.
8. Blin, Henri.
   1897. L'industrie fromagère en Loir-et-Cher. Le fromage de Thenay. *In* Jour. Agr. Prat., ann. 61, v. 2, no. 49, p. 876–879.
9. Blyth, Alexander Wynter and Blyth, Meredith Wynter.
   1903. Foods; their composition and analysis, 5th ed., p. 306. London.
10. Böggild, B.
    1890. Eine Analyse der Gislev-käse. Ugeskrift for Landmänd, II, no. 20, Abstract. Biedermann's Centbl. für Agrikulturchemie, Jahrg. 20, p. 287. Leipzig, 1891.
11. Brünnich, J. C.
    1901. Analyses of cheese and butter manufactured at the Queensland Agricultural College, Gatton. *In* Queensland Agr. Jour., v. 9, no. 4, p. 424–428.
12. [Büttner, C.] See citation 65.
13. [Caldwell.
    1877. Alpwirthschaftliche Monatsblätter, p. 158.] See citation 43, p. 325.
14. Chattaway, Wm.; Pearmain, T. H.; and Moor, C. G.
    1894. On the composition of cheese. *In* The Analyst, v. 19, p. 145–147.
15. 1895. The composition of some English cheeses. *In* The Analyst, v. 20, no. 231, p. 132–134.

[1] References inclosed in brackets have not been consulted in the original.

16. Clark, R. D.
1887. Report on cheese. New York State Dairy Commissioner, 3rd Ann. Rpt. for 1886, p. 50, 62.
17. 1889. Composition of Canadian cheese. Ibid., 5th Ann. Rpt. for the year 1888, p. 422.
18. 1891. Ibid., 7th Ann. Rpt. for the year 1890, p. 300.
19. Cooke, W. W., and Hills, J. L.
1892. Making cheese from different qualities of milk. Vermont Agr. Exp. Sta., 5th Ann. Rpt. [for] 1891, p. 90.
20. Cornalba, G.
1907. I formaggini di lecco. *In* L'Industria Lattiera e Zootecnica, v. 5, no. 5, p. 35.
21. 1907. I formaggi molli di lusso. *In* Il Coltivatore, v. 53, no. 49, p. 713–717.
22. Cribb, Cecil H.
1906. Note on Dutch cheese. *In* The Analyst, v. 31, no. 361, p. 105–111.
23. Currie, J. N. See citations 56, 82.
24. Dahl,
1872. Ueber Norwegens Natur, Rindviehhaltung und Molkereiwirthschaft. *In* Milchzeitung, Jahrg. 1, no. 16, p. 185–191, May 15; no. 18, p. 205–212, June 15. See p. 210.
25. Dare, F. E.
1912. Dorset Blue cheese. *In* Jour. Roy, Agr. Soc. England, v. 73, p. 32–35.
26. Dox and Edmond. See citation 81.
27. Drew, Charles W.
1890. Report upon cheese. Minnesota State Dairy and Food Commissioner, 3rd Bien. Rpt., p. 235.
28. Duclaux, Pierre Émile.
1894. Le lait, 2d ed., p. 259–311.
29. Eugling, Wm., and Klenze, Von.
1878–80. Versuche auf dem Gebiete der Alpenwirthschaft. *In* Milch. Ztg., Jahrg. 7, no. 11, p. 141–143, Mar. 13; no. 12, p. 157–160, Mar. 20, 1878; Jahrg. 9, no. 40, p. 597–599, Oct. 6, 1880.
[1875–6. Bericht über die Thätigkeit der Versuchsstation des Landes Vorarlberg, p. 12.] See citation 42, p. 331.
30. [Fallot.
1905. Premier Congrès International Hygiene Alimentaire, 4th sec., Paris. Analyses made at Laboratory, Loir-et-Cher, Blois, France.]
31. Fascetti, G.
1903. Preparazione e composizione del formaggio lombardo alla crema denominato 'Mascarpone." Annuario della Reale Stazione Sperimentale di Caseificio di Lodi, ann. 1902, p. 71.
32. [Fleischmann, W.
1881–85. Bericht über die Wirksamkeit der milchwirtschaftlichen Versuchs-stationen und des Molkerei-Institutes Raden, 1880, p. 34; 1884, p. 30.] See citation 43, p. 334.
33. Goesmann, C. A.
1889. Massachusetts State Agricultural Experiment Station, Amherst. 6th Ann. Rpt., 1888, p. 239.
34. Griffiths, A. B.
1892. Analyses de quelques fromages d'Angleterre. *In* Bulletin de la Société Chimique de Paris, ser. 3, v. 7, p. 282–283.

35. HAECKER, T. L.
1894. Manufacture of sweet curd cheese. *In* Minnesota Agr. Exp. Sta. Bul. 35, p. 104–128. See p. 115, 122, 127.

36. HASSALL, ARTHUR HILL.
1876. Food, its adulterations and the methods for their detection, p. 450.

37. HOFFMAN, M.
1898. Die milchwirtschaftlichen Verhältnisse Portugals. *In* Milch Ztg., Jahrg. 27, no. 13, p. 197–199.

38. [HORNIG.
1869. Beiträge zur Geschichte, Technik und Statistik der Käserei, p. 40.]. See citation 43, p. 327, 329, 330, 335, 341.

39. JOHNSON, S. W.
1893. Analyses of some American cheese. *In* Conn. Agr. Exp. Sta. Ann. Rept., 1892, p. 156. New Haven.

40. [JONES.]
1858. Cited from White, Henry. Report on the exhibition of cheese at Chester in July, 1858. *In* Jour. Roy. Agr. Soc. England, v. 19, p. 420.

41. [KALANTAROW, A. VON.
1882. Ueber die chemische Zusammensetzung einiger russischer Käse. *In* Journal Russian Physico-chemical Society, v. 14, sec. 1, p. 155, 156.] Cited from Ber. Deut. Chem. Gesell., Jahrg. 15, p. 1220.

42. KLENZE, H. L. VON.
1885. Versuche über die Verdaulichkeit verschiedener Käsesorten. *In* Milch Ztg., Jahrg. 14, no. 24, p. 369–373.

43. KOENIG, FRANZ JOSEPH.
1903. Chemie der menschlichen Nahrungs- und Genussmittel, 4 aufl., v. 1, p. 321, 335.

44. KRÜGER, R.
1892. Beiträge zur Herstellung kamambertartiger Weichkäse. *In* Molk. Ztg., Jahrg. 6, no. 33, p. 402. Hildesheim. [In this paper Krüger refers to previous papers of his in the same periodical.]

45. LEUTNER, W.
1885. Krutt, ein von den Kirgisen bereiteter Käse. *In* Pharm. Ztschr. für Russland, Jahrg. 24, no. 1, p. 8–9. Cited also in Chem. Ztg., Jahrg. 9, no. 14, p. 254.

46. LINDET, AMMANN, and BRUGIÈRE.
1906. Sur la composition des principaux fromages consommés en France. *In* Rev. Gén. Lait, Ann. 5, no. 18, p. 416–418.

47. [LINDT, O., and MÜLLER, C.
1867. Analysen verschiedener schweizerischer Käsesorten. Generalbericht über die erste schweizerische Milchprodktenausstellung in Bern, 1. bis. 11. Sept. 1867, von R. Schatzman.]
1868. Abstract Jahresbericht über die Fortschritte auf dem Gesammtgebiete der Agrikultur-Chemie, Jahrg. 10, p. 354–455. See also citations 43, p. 324, 327, 331, 333.

48. LLOYD, F. J.
1894. Observations on Cheddar cheese making. Report, 1893. Jour. of the Bath and West and Southern Counties Society, ser. 4, v. 4, 1893–4, p. 131–175. See p. 161.

49. Macoir, Louis.
1904. L'industrie fromagère en Franche-Comté. *In* Bulletin de l'Agriculture, v. 20, p. 376–441. See p. 390.
50. Maggiora, Arnaldo.
1892. Ueber die Zusammensetzung des überreifen Käses. *In* Archiv Hyg., v. 14, no. 2, p. 216–224. See p. 220.
51. [Maior, G.
1897. Die tzigaja-race, ihre Eigenschaften und ihre wirtschaftliche Nutsbarkeit. Inaug.-diss.] Cited from Thiele, Paul. Einiges über Schafkäsefabrikation in Siebenbürgen. *In* Milch Ztg., Jahrg. 26, no. 46, p. 727–729.
52. Manetti, L., and Musso, Giovanni.
1876. Sulla composizione dei caci di grana. *In* Staz. Sper. Agr. Ital. v. 5, fasc. 3, p. 174–201. See p. 187.
53. 1878. Uber die Zusammensetzung und die Reife des Parmesankäses. *In* Landw. Vers. Stat., v. 21, p. 211–229. See p. 215.
54. Marre, E.
1906. Le Roquefort, p. 95.
55. [Martin, Ed. W., and Moore, R. W.] See citation 15, p. 45.
56. Matheson, K. J., Thom, Charles, and Currie, J. N.
1914. Cheeses of the Neufchatel group. Conn. (Storrs) Agr. Exp. Sta. Bul. 78, p. 314.
57. Mayer, Adolf.
1887. Analysen von holländischen Käsesorten. *In* Milch Ztg., Jahrg. 16, no. 5, p. 87.
58. Melikoff, P. G., and Rosenblatt, M.
1907. Le brynsa, fromage russe de lait de brebis. *In* Jour. Agr. Prat., ann. 71, n. s., vol. 14, no. 52, p. 814–815.
59. Monrad, J. H.
1912. That egg cheese. *In* Hoard's Dairyman, v. 44, no. 19, p. 588.
60. Musso, Giovanni, and Menozzi, A.
1878. Sulla composizione degli stracchini. *In* Staz. Sper. Agr. Ital., 1877, v. 6, fasc. 4, p. 201–206.
61. [Muter, J.] See citation 15, p. 44, 50, 52.
62. Patrick, G. E.
1894. (1) Changes during cheese ripening. Iowa Agr. Exp. Sta. Bul. 24, p. 970.
1901. (2) Unpublished data. Analyses made in U. S. Dept. Agr., 1901. Samples collected by H. E. Alvord in Europe.
63. Payen, A.
1849. Composition de plusieurs substances alimentaires. *In* Jour. Pharm. et Chim., ser. 3, v. 16, p. 279.
64. 1865. Précis théorique et pratique des substances alimentaires, 4th ed. See p. 190–213.
65. Pereira, A. Cardoso, and Mastbaum, Hugo.
1904. Technisches und Analytisches über die Käseindustrie in Portugal. *In* Chem. Ztg., Jahrg. 28, no. 84, p. 998–1000.
66. Richmond, Henry Droop.
1899. Dairy chemistry; a practical handbook for dairy chemists and others having control of dairies. See p. 303.
67. [Rollet.] *See* citation 49, p. 390, 413.
68. Rubner, M.
1879. Analyse des sog. Topfens. *In* Ztschr. Biol., v. 15, p. 496.

69. Sartori, Giuseppe.
1890. Sulla composizione della ricotta pecorina. *In* Staz. Sper. Agr. Ital., v. 18, fasc. 4, aprile, p. 434–436.
1892. Analisi del caciocavallo. Nota preliminare. Ibid., v. 22, fasc. 4, aprile, p. 337–340.
1890. Die chemie des Schafkäses. *In* Milch Ztg., Jahrg. 19, no. 51, p. 1001–1004.
72. [Sheldon, John Prince.
1876. Prize essay on cheese making, etc.] See citation 43, p. 326.
73. Shuttleworth, A. E.
1894. The composition of milk, cheese, and whey in relation to one another. Ontario Agr. Col., Guelph, Ontario, Bul. 96.
74. 1896. Ann. Rept. of the professor of chemistry. *In* Ontario, Agr. Col. and Expt. Farm, 21st Ann. Rpt., 1895. See p. 25.
75. Sieber, Nadina.
1880. Ueber die angebliche Umwandlung des Eiweisses in Fett beim Reifen des Roquefort-Käses. *In* Jour. Prakt. Chem., n. f., v. 21, p. 203–221.
76. Snyder, Harry.
1893. The composition of dairy products. *In* Minnesota Agr. Exp. Sta. Bul. 27, p. 50–62. See p. 60.
77. [Soxhlet, F.
1878. Erster Bericht über Arbeiten der K. K. Landwirthschaftlich-Versuchsstationen, Wien, v. 29, [for] 1870–1878.] See citation 43, p. 322, 335.
78. Spica, Matteo, and Blasi, Luigi de.
1892. Ricerche chimiche sui formaggi siciliani. *In* Staz. Sper. Agr. Ital., v. 23, fasc. 2, p. 132–143. See p. 148.
79. [Storch, V.
1879. Forschungen auf dem Gebiete der Viehhaltung, p. 166–232.] See citation 43, p. 333.
80. Stutzer, A.
1896. Die chemische Untersuchungen der Käse. *In* Ztschr. Analyt. Chem., Jahrg. 35, p. 493–502. See p. 502.
81. Thom, Charles.
1909. Camembert cheese problems in the United States. *In* U. S. Dept. Agr., Bur. Anim. Indus. Bul. 115, p. 15.
82. Thom, Charles, Currie, J. N., and Matheson, K. J.
1914. Studies relating to the Roquefort and Camembert type of cheese. Conn. (Storrs) Agr. Exp. Sta. Bul. 79, p. 361.
83. Van Slyke, Lucius Lincoln.
1891. Investigations of cheese, New York Agr. Exp. Sta. (n. s.) Bul. 37.
84. 1892. Experiments in the manufacture of cheese during May. Ibid., Bul., 43, June.
85. 1892. Experiments in the manufacture of cheese during June. Ibid., Bul. 43, Aug.
86. 1892. Experiments in the manufacture of cheese. Ibid., Bul. 46, Sept.; Bul. 47, Nov.
87. 1893. Summary of results of experiments made in the manufacture of cheese during the season of 1892. Ibid., Bul. 50, Jan.
88. 1893–4. Experiments in the manufacture of cheese. Ibid., Bul. 54, May; Bul. 56, May; Bul. 60, Oct.; Bul. 61, Nov.; Bul. 62, Dec. 1893; Bul. 65, Jan., 1894.

89. VIETH, P.
1887. Mitteilungen aus dem Laboratorium der Aylesbury Dairy Co. in London. *In* Milch Ztg., Jahrg. 16, no. 7, p. 120–121.
90. 1892. Mitteilungen aus dem Laboratorium der Aylesbury Dairy Co. in London. *In* Milch Ztg., Jahrg. 21, no. 12, p. 191–192.
91. 1898. Bericht über die Thätigkeit des milchwirtschaftlichen Instituts in Hameln im Jahre 1897. See p. 33.
92. VOELCKER, AUGUSTUS.
1861. On the composition of cheese and on practical mistakes in cheese making. *In* Jour. Roy. Agr. Soc. England, v. 22, p. 29–69.
93. 1862. Cheese experiments. Ibid., v. 23, p. 170–191.
94. 1870. On a peculiar kind of Swedish whey cheese, and on a Norwegian goats'-milk cheese. Ibid., ser. 2, v. 6, p. 333–336.
95. 1882. Amerikanischer Käse aus magerer Milch mit Zusatz von Schmalz oder Oleomargarin. *In* Milch Ztg., Jahrg. 11, no. 28, p. 438–439.
96. WALLACE, H. C.
1893. Investigations in cheese making. *In* Iowa Agr. Exp. Sta. Bul. 21, p. 735–767. See p. 756.
97. WEEMS, J. B.
1896. Unpublished data. Analyses made at Iowa Agr. Col. Samples furnished by J. H. Monrad.
98. WERENSKIOLD, FREDRIK H.
1886. Aarsberetning angaaende de offentlige foranstaltninger til landbrugets fremme i aaret 1885. See p. 78.
99. 1894. Ibid., [for] 1893. See p. 87.
100. WILSON, N. E.
1892. Cheese and cheese manufacture. Nevada Agr. Exp. Sta. Bul. 18.
101. ZEGA, A.
1897. Kajmak. *In* Chem. Ztg., Jahrg. 21, no. 6, p. 41.
102. ZEGA, A., and BAJIC, M.
1895. Katschkawalj. *In* Chem. Ztg., Jahrg. 19, no. 85, p. 1920.
103. ZEGA, A., and PANICS, L.
1898. Serbischer Käse. *In* Chem. Ztg., Jahrg. 22, no. 18, p. 158.

INDEX TO DESCRIPTIONS AND ANALYSES OF CHEESE.

Abertam: Description, 3.
Albumin. *See* Ziger.
Alemtejo: Description, 3; analysis, 62.
Algau. *See* Limburg.
Algau Emmental. *See* Emmental.
Alpin: Description, 4.
Altenburg: Description, 4.
Alt Kuhkäse. *See* Hand.
Altsohl. *See* Brinsen.
Ambert: Description, 4.
Ancien Impérial: Description, 4.
Ancona. *See* Pecorino.
Appenzell: Description, 4.
Armadir: Description, 4.
Arnauten. *See* Travnik.
Auvergne (or Auvergne Bleu). *See* Cantal.
Backstein (*see also* Limburg): Description, 4; analysis, 62.
Banbury: Description, 4.
Barberey: Description, 4.
Battlemat: Description, 5; analysis, 62.
Bauden: Description, 5.
Belgian Cooked: Description, 5.
Bellelay: Description, 5; analysis, 63.
Bellunese. *See* Emmental.
Bergquara: Description, 6.
Bergues. *See* Leyden.
Berliner Kuhkäse. *See* Hand.
Bgug-Panir: Description, 6.
Bitto: Description, 6.
Bleu (*see also* Gex; Sassenage; Septmoncel): Description, 6.
Blue Dorset. *See* Dorset.
Blue Vinny. *See* Dorset.
Bondon (*see also* Neufchâtel): Analysis, 63.
Boudanne: Description, 6.
Boulette. *See* Maroilles.
Box (firm): Description, 6.
Box (soft): Description, 7.
Bra: Description, 7.
Brand: Description, 7.
Brick: Description, 7; analysis, 63.
Brickbat: Description, 8.
Brie: Description, 8; analysis, 63.
Brinsen: Description, 9; analysis, 63.
Briol. *See* Limburg.
Brizecon. *See* Reblochon.
Broccio (*see also* Ziger): Description, 9.
Brocotte. *See* Ziger.
Burgundy: Description, 9; analysis, 63.
Buttermilk: Description, 9.
Cacio. *See* Parmesan.
Caciocavallo: Description, 9; analysis, 63.
Cacio Fiore: Description, 10.
Cacio Pecorino Romano. *See* Pecorino.
Cacio Romano. *See* Chivari.
Caerphilly: Description, 10; analysis, 63.
Cambridge: Description, 10; analysis, 63.
Camembert: Description, 10; analysis, 63.
Cancoillotte. *See* Fromage Fort.
Canquillote (*see also* Fromage Fort): Description, 11.
Cantal: Description, 11; analysis, 63.
Carinthian. *See* Limburg.
Carré Affiné. *See* Ancien Impérial.
Castello Branco. *See* Serra da Estrella.
Ceracee. *See* Ziger.
Champoléon: Description, 12.
Chaource: Description, 12.
Chaschôl de Chaschosis: Description, 12.
Cheddar: Description, 12; analysis, 63.
Cheshire: Description, 13; analysis, 64.
Cheshire-Stilton: Description, 14.
Chevret. *See* Goats' milk.
Chevrotin. *See* Goats' milk.
Chhana: Description, 14.
Chiavari: Description, 14.
Clérimbert. *See* Alpin.
Club.
Colmar. *See* Münster.
Commission: Description, 14.
Compiègne. *See* Camembert.
Contentin. *See* Camembert.
Cooked: Description, 14.
Cotherstone: Description, 15; analysis, 65.
Cotrone. *See* Pecorino.
Cottage: Description, 15.
Coulommiers: Description, 15; analysis, 65.
Cream: Description, 15; analysis, 65.
Cream, French Demi-sel: Analysis, 65.
Crescenza: Analysis, 65.
Creuse: Description, 16.
Cristalinna: Description, 16.
Daisies. *See* Cheddar.
Damen: Description, 16.
Danish Export: Description, 16; analysis, 65.
Daralag. *See* Bgug-Panir.
Dauphin. *See* Maroilles.
Delft. *See* Leyden.
Demi-sel. *See* Cream.
Derbyshire: Description, 16; analysis, 65.
Devonshire Cream: Description, 17.
Domestic Swiss. *See* Emmental.
Dorset: Description, 17; analysis, 65.
Dotter: Description, 17.
Dresdener Bierkäse. *See* Hand.
Dry: Description, 17.
Duel: Description, 17.
Dunlop: Description, 18; analysis, 65.
Dutch. *See* Cottage.
Edam: Description, 17; analysis, 65.
Egg: Description, 17.

Elbing: Description, 18.
Emmental: Description, 19; analysis, 65.
Emmersdorf. *See* Limburg.
Engadine: Description, 21; analysis, 65.
English Dairy: Description, 21.
Époisse: Description, 21.
Eriwani: Description, 21.
Ervy (*see also* Troyes): Description, 21.
Farm: Description, 21.
Ferme. *See* Farm.
Filled: Description, 21.
Flats. *See* Cheddar.
Flower: Description, 22.
Fondue. *See* Fromage Fort.
Fontine d'Aosta. *See* Emmental.
Forez: Description, 22.
Formagelle: Description, 22.
Formaggio di Capra. *See* Goats' Milk.
Formaggini: Description, 22.
Formaggini di Lecco: Analysis, 66.
Formaggio Dolce. *See* Emmental.
Formaggio Duro. *See* Nostrale.
Formaggio Grana Lodigiano. *See* Parmesan.
Formaggio Tenero. *See* Nostrale.
Fourme. *See* Cantal.
Fourme d'Ambert. *See* Ambert.
Freisa. *See* Cooked.
Fresco. *See* Stracchino.
Fromagère. *See* Canquillote; Fromage Fort.
Fromage à la Crème. *See* Cream.
Fromage à la Pie. *See* Farm.
Fromage Blanc. *See* White.
Fromage Bleu. *See* Bleu.
Fromage Double Crème. *See* Cream.
Fromage de Boîte. *See* Box (soft).
Fromage de Bourgogne. *See* Burgundy.
Fromage de Foin. *See* Hay.
Fromage de Troyes. *See* Barberey.
Fromage Fort: Description, 22.
Fromage Mou. *See* Maquée.
Fromage Persillé. *See* Gex; Bleu.
Frühstück: Description, 22.
Ftinoporino: Description, 22.
Gaiskäsli. *See* Goats' Milk.
Gammelost: Description, 22; analysis, 66.
Gautrais: Description, 23.
Gavot: Description, 23.
Geheimrath: Description, 23.
Géromé (*see also* Münster): Description, 23.
Gervais (*see also* Cream): Description, 23; analysis, 66.
Gex: Description, 24; analysis, 66.
Gislev: Description, 24; analysis, 66.
Glarnerkäse. *See* Sapsago.
Gloire des Montagnes. *See* Damen.
Glumse: Description, 24.
Gloucester (*see also* Derbyshire): Analysis, 66.
Goats' Milk: Description, 24; analysis, 66.
Gorgonzola: Description, 25; analysis, 66.
Gouda: Description, 25; analysis, 66.
Gournay: Description, 26.
Goya: Description, 26.
Grana. *See* Parmesan.
Granular Curd: Description, 26.
Gratairon. *See* Goats' Milk.
Gray: Description, 26.
Grottenhof. *See* Limburg.
Gruau de Montagne. *See* Ziger.
Grunerkäse. *See* Sapsago.
Gruyère: Description, 26; analysis, 66.
Guiole. *See* Laguiole.
Güssing: Description, 27.
Hand: Description, 27.
Hartkäse. *See* Saanen.
Harz: Description, 27; analysis, 67.
Hay: Description, 27.
Hervé (*see also* Limburg): Analysis, 67.
Hobbe. *See* Leyden.
Hohenburg. *See* Box (firm).
Hohenheim: Description, 27.
Holstein Dairy Cheese. *See* Leather.
Holstein Health: Description, 28.
Holstein Skim-milk: Description, 28.
Holsteiner Gesundheitskäse: *See* Holstein Health.
Holsteiner Magerkäse. *See* Holstein Skim-milk.
Hop: Description, 28.
Hopfen. *See* Hop.
Hudelziger. *See* Ziger.
Hvid Gjedeost: Description, 28.
Iglesias. *See* Pecorino.
Ihlefeld. *See* Hand.
Ilha: Description, 28; analysis, 67.
Incanestrato: Description, 28; analysis, 67.
Isigny: Description, 29; analysis, 67.
Jack: Description, 29.
Jochberg: Description, 29.
Josephine: Description, 29.
Jura. *See* Septmoncel.
Kajmak: Description, 29; analysis, 67.
Karut: Description, 30.
Kasach. *See* Ossetin.
Kascaval: Description, 30; analysis, 67.
Katschkawalj: Description, 30; analysis, 67.
Katzenkopf. *See* Edam.
Kirgischerkäse. *See* Krutt.
Kjarsgaard: Description, 30.
Klencz. *See* Brinsen.
Kloster: Description, 30.
Knaost. *See* Pultost.
Koejekaas. *See* Leyden.
Kolos-Monostor: Description, 30.
Kolosvarer: Description, 30.
Komynde. *See* Leyden.
Koppen. Description, 30.
Kosher: Description, 30.
Kosher Gouda: Description, 30.
Kräuterkäse. *See* Sapsago.
Krutt: Description, 31; analysis, 67.
Kuhbach: Description, 31.
Laguiole: Description, 31; analysis, 67.
Lamothe. *See* Goats' Milk.
Lanark. *See* Limburg.
Lancashire: Description, 31.
Landoch. *See* Brinsen.
Langres: Description, 31.
Lapland: Description, 31.
Larron. *See* Maroilles.
Latticini: Description, 32.
Leather: Description, 32.
Leder. *See* Leather.
Leicester (*see also* Derbyshire): Description, 32; analysis, 67.
Leonessa. *See* Pecorino.
Lescin: Description, 32.

Leyden: Description, 32; analysis, 67.
Liederkranz: Description, 33.
Limburg: Description, 33; analysis, 67.
Lindenhof. *See* Limburg.
Liptau (*see also* Brinsen): Description, 33.
Livarot: Description, 33; analysis, 67.
Livlander. *See* Hand.
Long Horns. *See* Cheddar.
Lorraine: Description, 34.
Lüneberg: Description, 34.
Maconnais: Description, 34.
Macqueline: Description, 34.
Maigre. *See* Farm.
Majocchina. *See* Incanestrato.
Maikäse: Description, 35.
Maile: Description, 35.
Maile Pener: Description, 35.
Mainz Hand: Description, 35; analysis, 67.
Malakoff (*see also* Neufchâtel): Description, 35.
Manbollen. *See* Edam.
Manur: Description, 35.
Maquée: Description, 35.
Marianhof. *See* Limburg.
Märkisch Hand: Description, 35.
Marelles: Description, 35; analysis, 67.
Mascarpone: *See also* Ziger. Description, 36; analysis, 67.
Mecklenberg Skim: Description, 36.
Mesitra: Description, 36.
Mignot: Description, 36.
Mintzitra: Description, 37.
Mondsee. *See* Box (firm).
Monk's Head. *See* Bellelay.
Montasio: Description, 37.
Montavoner: Description, 37.
Mont Cenis: Description, 37.
Mont d'Or: Description, 37; analysis, 67.
Monterey. *See* Jack.
Montlhéry: Description, 38.
Morin. *See* Limburg.
Mou. *See* Farm.
Mozarinelli: Description, 38.
Münster: Description, 38; analysis, 67.
Mysost: Description, 39; analysis, 67.
Nagelkazen: Description, 39.
Nessel: Description, 39.
Neufchâtel: Description, 39; analysis, 68.
Neusohl. *See* Brinsen.
New Milk: Description, 39.
Niederungskäse. *See* Elbing.
Nieheim: Description, 39.
Nögelost: Analysis, 68.
Nostrale: Description, 40.
Oka. *See* Trappist.
Olivet: Description, 40; analysis, 68.
Olmützer Bierkäse. *See* Hand.
Olmützer Quargel (Olmütz): Description, 40; analysis, 68.
Ossetin: Description, 40.
Ostiepek: Description, 41.
Ovcji Sir: Description, 41.
Paglia: Description, 41.
Pago: Description, 41.
Paneddas. *See* Cooked.
Parencia: Description, 41.
Parmesan: Description, 41; analysis, 68.
Pâté Bleu. *See* Bleu.
Pavillon. *See* Camembert.
Pecorino: Description, 42; analysis, 68.
Pecorino Dolce. *See* Pecorino.
Pecorino Sardo: Description, 43.
Pecorino Tuscano. *See* Pecorino.
Penteleu: Description, 43.
Pepper Cream. *See* Neufchâtel.
Petit Carré. *See* Ancien Impérial; Neufchâtel.
Petit Suisse (*see also* Neufchâtel): Analysis, 68.
Pfister: Description, 43.
Philadelphia Cream: Description, 43.
Pimiento: Description, 43.
Pimp. *See* Mainz Hand.
Pineapple: Description, 43; analysis, 68.
Poitiers. *See* Goats' Milk.
Pont l'Évêque: Description, 44; analysis, 68.
Port du Salut: Description, 44; analysis, 69.
Potato: Description, 45.
Potted: Description, 45; analysis, 69.
Prattigau: Description, 45.
Prestost: Description, 45.
Primost. *See* Mysost.
Providence: Description, 45.
Provole: Description, 45.
Provoloni. *See* Provole.
Puglia. *See* Pecorino.
Pultost: Description, 46.
Quacheq: Description, 46.
Quadro. *See* Stracchino.
Quartirola. *See* Stracchino.
Queso de Cincho: Description, 46.
Queso de Hoja: Description, 46.
Queso de Mano: Description, 46.
Queso de Palma Metida. *See* Queso de Cincho.
Queso de Prensa: Description, 46.
Queso de Puna: Description, 47.
Queyras. *See* Champoléon.
Rabacal: Description, 44; analysis, 69.
Raden: Description, 47.
Rangiport: Description, 47.
Raper. *See* Rayon.
Raschera. *See* Nostrale.
Rayon: Description, 47.
Rebbiola: Description, 47; analysis, 69.
Reblochon: Description, 47; analysis, 69.
Recuit. *See* Ziger.
Reggian. *See* Parmesan.
Reggiano. *See* Parmesan.
Reibkäse. *See* Saanen.
Reindeer Milk: Description, 48; analysis, 69.
Remoudou. *See* Romadour.
Rheinwald. *See* Schamser.
Ricotta (*see also* Ziger): Analysis, 69.
Riesengebirge: Description, 48.
Rinnen: Description, 48.
Riola: Description, 48.
Robiola. *See* Rebbiola.
Rocamadour: Description, 48.
Roll: Description, 48.
Rollot: Description, 48.
Romadour: Description, 48; analysis, 69.
Romano. *See* Pecorino.
Romatur. *See* Romadour.
Roquefort: Description, 49; analysis, 69.
Saaland Pfarr. *See* Prestost.
Saanen: Description, 49.
Sage: Description, 50.

Saint Benoît: Description, 50.
Saint Claude: Description, 50.
Saint Marcellin: Description, 50.
Saint Michels. *See* Limburg.
Saint Remy: Description, 50.
Saint Wel. *See* Yogurt.
Salamana: Description, 50.
Saloio: Description, 51; analysis, 69.
Sandwich Nut. *See* Cream.
Sapsago: Description, 51; analysis, 69.
Sassenage (*see also* Gex): Description, 51.
Satz. *See* Hand.
Savoy: Analysis, 69.
Scanno: Description, 52.
Scarmorze: Description, 52.
Schabzieger: *See* Sapsago.
Schachtelkäse. *See* Box (soft).
Schamser: Description, 52.
Schlesischer Sauermilchkäse. *See* Silesian.
Schlesischer Weichquarg. *See* Silesian.
Schloss: Description, 52.
Schottengsied: Description, 52.
Schützen. *See* Limburg.
Schwarzenberg: Description, 52.
Schweitzer. *See* Swiss.
Sénecterre: Description, 52.
Septmoncel (*see also* Gex): Description, 52; analysis, 69.
Sérac. *See* Ziger.
Serra da Estrella: Description, 53; analysis, 69.
Servian: Description, 53; analysis, 53.
Siebenbürgen. *See* Brinsen.
Silesian: Description, 53.
Siraz: Description, 54.
Sir Iz Mjesine: Description, 54.
Sir Mastny :Description, 54.
Sir Posny: Description, 54.
Slipcote: Description, 54.
Smearcase. *See* Cottage.
Sorte Maggenga. *See* Parmesan.
Sorte Vermenga. *See* Parmesan.
Soumaintrain. *See* Camembert.
Spalen: Description, 54; analysis, 70.
Sperrkäse. *See* Dry.
Spitz: Description, 54.
Squares. *See* Cheddar.
Steppes: Description, 55.
Stilton: Description, 55; analysis, 70.
Stirred Curd. *See* Cheddar.
Stracchino: Description, 55.
Stracchino di Gorgonzola. *See* Gorgonzola.
Strassburg. *See* Münster.
Stringer. *See* Spalen.
Styria: Description, 56.
Sweet Curd (*see also* Cheddar): Description, 56.
Swiss: Description, 56; analysis, 70.
Tafi: Description, 56.
Tamié: Description, 56.
Tanzenberg. *See* Limburg.
Teleme: Description, 56.
Tempête. *See* Canquillote.
Tessel: Analysis, 70.
Tête de Maure. *See* Edam.
Tête de Moine. *See* Bellelay.
Texel: Description, 56.
Thenay: Description, 56; analysis, 70.
Thraanen. *See* Emmental
Thuringia Carraway. *See* Hand.
Thury-en-Valois. *See* Camembert.
Tibet: Description, 57.
Tignard: Description, 57.
Tilsit: Description, 57.
Tome de Beaumont. *See* Tamié.
Tome de Montagne. *See* Vacherin.
Topfen (*see also* Cooked): Analysis, 70.
Toppen: Description, 57.
Touareg: Description, 57.
Trappist: Description, 57; analysis, 70.
Travnik: Description, 58.
Trockenkäse. *See* Dry.
Trouville: Description, 58.
Troyes: Description, 58; analysis, 70.
Tschil: Description, 59.
Tuile de Flandre. *See* Marolles.
Tuna: Description, 59.
Tuschinsk. *See* Ossetin.
Twdr Sir: Description, 59.
Tworog: Description, 59.
Tyrol Sour. *See* Hand.
Uri: Description, 59.
Vacherin: Description, 59; analysis, 70.
Vendôme: Description, 59; analysis, 70.
Villiers: Description, 60.
Viterbo (*see also* Pecorino): Analysis, 70.
Vlasic. *See* Travnik.
Void: Description, 60.
Vorarlberg Sour-milk: Description, 60; analysis, 70.
Walliskäse. *See* Saanen.
Warwickshire (*see also* Derbyshire): Analysis, 70.
Washed Curd. *See* Cheddar.
Weihenstephan. *See* Box (firm).
Weisslak: Description, 60.
Wensleydale: Description, 60; analysis, 70.
Werderkäse. *See* Elbing.
West Friesian: Description, 61.
Westphalia Sour-milk: Description, 61.
White: Description, 61.
Wiltshire (*see also* Derbyshire): Analysis, 70.
Withania: Description, 61.
Yogurt: Description, 61.
Yorkshire-Stilton. *See* Cotherstone.
Young Americas. *See* Cheddar.
Ziegel: Description, 61.
Ziegenkäse. *See* Goats' Milk.
Ziger: Description, 62; analysis, 70.
Zips. *See* Brinsen.

ADDITIONAL COPIES
OF THIS PUBLICATION MAY BE PROCURED FROM
THE SUPERINTENDENT OF DOCUMENTS
GOVERNMENT PRINTING OFFICE
WASHINGTON, D. C.
AT
10 CENTS PER COPY

▽